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GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Sir Guy Granet

WARTIME conditions and the necessity of going to press earlier in the week than formerly, preclude us from making more than a brief reference in this issue to the death of Sir Guy Granet, in his 76th year. We know of no other instance of a man entering the railway service later in life than usual—he was 33 when he was appointed Secretary of the Railway Companies' Association, and 38 when he was appointed Assistant General Manager of the Midland Railway—having so successful a railway career. The latter was an appointment that caused great surprise at the time. In those days there was considerable rivalry between the old North Western and the Midland Railways, and we well remember an L.N.W.R. chief officer commenting on Granet's appointment: "Well, we have nothing to fear now." But he was very wrong. When Sir Guy joined the Midland he found it an undertaking rather living on its past reputation. With the assistance of Cecil Paget, Frank Tatlow, William Towle, and other chief officers, he left it, at the end of his General Managership in 1918, the most efficiently run British railway. But Sir Guy Granet's railway career was by no means ended. Joining the Midland board in 1918, he succeeded Mr. Charles Booth as Chairman in 1922, and shortly after the formation of the London Midland & Scottish Railway in 1923, he succeeded Lord Lawrence as Chairman, which office he held from March, 1924, until 1927, when he was succeeded by Lord Stamp. He continued as a Director until his death. Sir Guy Granet was an outstanding example of imaginative choice of men on the grounds that above a certain stage it is what a man is, and not what he *knows* that counts.

Railways and Governments

Argentine railway securities have shown an appreciable rise in value since the publication of the British Government's declaration to Argentina that it expects the rights and interests of British nationals in that country to receive proper consideration and protection, and Mr. W. J. Stevens, in a letter in *The Financial Times* recently said that British railway investors have rubbed their eyes with astonishment and envy. He points out that the measure of the lack of confidence in British railway securities is shown in the prices at which the stocks stand, notwithstanding the tributes which have been paid by the Ministers of the Crown to the successful efforts of the railway companies as an essential part of the war effort. Mr. Stevens declares his belief that despite the evidence of the stock prices he believes that whether the railways are nationalised, grouped in a transport board, or returned to their rightful owners, the Government will treat the railways honestly and fairly, just as it expects the Argentine Government to treat British-owned railways in that country. He points out that example is better than precept even in diplomacy, and suggests that it is high time the Minister of War Transport, or some other responsible member of the Government, made a declaration to that effect.

Trade with Latin America

The importance of British trade with South and Central America is so well recognised by British manufacturers that it is in a sense preaching to the converted to lay stress on it again. Nevertheless, the address given recently by Sir Malcolm Robertson, formerly our Ambassador in Buenos Aires, to the British and Latin American Chamber of Commerce, is well worth attention. He recognises that in productive capacity, engineering, managerial, and working effort, Great Britain is second to none, but considers that all is not right with our salesmanship. We have often been told that, unlike our competitors, we do not make a sufficient study of our markets and have tended to adopt the attitude to a potential customer of "take it or leave it" with the goods we choose to offer rather than trying to give him what he wants. In the main this is no longer true, and one sign of the change is the increasing attention paid to the study of Spanish. It should be the language as used in South America, which differs in many respects from the Spanish of the old world. In the opinion of Sir Malcolm Robertson "what we have to do is to build up real representatives of British commerce and industry abroad. They must not only just talk about their goods, they have got to know the people of that country."

A National Transport Programme

In our last week's issue we gave extracts from the comments in the national press on the booklet containing the reprint of a series of articles recently published in *The Railway Gazette*, dealing with the future of transport. Among other journals which have given notices of the booklet are the *Passenger Trans-*

port Journal, which gave lengthy extracts from it, and *Motor Transport*. The latter commented that subtle forms of persuasion and suggestion seldom have been employed to such good effect as in "A National Transport Programme." Dealing with the costs relating to road and rail transport, *Motor Transport* said that it is further suggested that whereas 34 per cent. of rail receipts are absorbed by maintaining and servicing the capital expended on rail tracks, only 11-12 per cent. is spent by the road operator on road upkeep, thus inviting the conclusion that the railways are in a very disadvantageous position; this contrasted strangely with figures showing that the conveyance costs by road are five times as much per ton-mile as the rail cost. The answer, of course, is that the conveyance costs showed what could be done if the traffic could be obtained to make a 100 or 50 per cent. pay load. This matter is also the subject of a letter and editor's note which appears on page 377.

Centenary of G.W.R. Mechanics' Institution

From an early record of the G.W.R. Mechanics' Institution at Swindon we learn that, as long ago as September, 1843, "a few members opened a library with a small number of books a few kind friends gave them, and others that were purchased with a small sum of money that had accumulated from fines in the hands of the company." In March, 1844, there were only 15 members, and about 130 books in the library, but by the end of the year the membership had increased to 129, and the book stock had risen to 522, with a circulation of 80 volumes weekly. The first President was Daniel Gooch, and the success of this famous mechanics' institution owes not a little to his encouragement and enthusiasm, which was all the more noteworthy as 1843 was 9 years before any public library existed in this country. As indicative of the progress which has been made during the intervening century, it is worthy of record that in 1942 the borrowings totalled 254,428 volumes. Whereas during its first year the average issue was 80 volumes a week, a recent analysis shows that, during the first and last full weeks of January, April, July, and September last year, books were issued from the central library at the average rate of 137 volumes an hour. On the Saturdays (10.30 a.m. to 1 p.m.) in the same period a record of 222 was reached, and a single day's total issue attained the high figure of 1,249 volumes on April 7. For a great number of years educational classes and lectures were an essential feature of the G.W.R. Mechanics' Institution, and in the 1887-88 session no fewer than 480 students were receiving instruction. Various classes continued under the control of the institution until 1891, when a local Technical Education Council was established under State arrangements, and management of the classes was thereafter transferred to that body.

Overseas Railway Traffics

Long term prospects have favoured the recent improvement in the stocks of the British-owned railways in Argentina, and the traffics have been generally better. In the 13th and 14th weeks of the financial year increases have been shown of £43,260 on the Buenos Ayres Great Southern, of £38,472 on the Central Argentine, of £16,740 on the Buenos Ayres & Pacific, and of £7,920 on the Buenos Ayres Western. The aggregate decreases on the Pacific and on the Western have at the same time been materially reduced. Among Brazilian railways the rise in receipts continues. For what may be called the first three quarters of the year 1943 the Great Western of Brazil shows an increase of £210,300, the Leopoldina one of £151,499, and the San Paulo one of £236,159. Antofagasta receipts for the same period amount to £1,122,200, an increase of £278,010, but Nitrate Railways, with £114,950, are £25,145 down. Central Uruguay traffics for the first quarter of the financial year show an advance of £121,440.

No. of week	Weekly traffics	Inc. or decrease		Aggregate traffic	Inc. or decrease	
		£	£		£	£
Buenos Ayres & Pacific	14th	103,200	-10,620	1,156,620	-22,320	
Buenos Ayres Great Southern*	14th	166,500	-22,860	1,939,080	+174,480	
Buenos Ayres Western*	14th	55,680	-4,980	660,360	-14,280	
Central Argentine*	14th	147,705	-21,297	1,761,468	-69,387	
Canadian Pacific	39th	1,700,200	+292,400	43,204,200	+5,778,800	

* Pesos converted at 16s to £

Aggregate gross earnings of the Canadian Pacific Railway for the first eight months of 1943 amounted to £37,946,200, an increase of £4,943,600 in comparison with the corresponding period of 1942, and the net earnings of £5,795,400 showed an improvement of £108,000.

Great Northern Railway (Ireland) Rates

The Railway Tribunal in Dublin has recently sanctioned, on the application of the Great Northern Railway Company (Ireland), increases as from September 1, 1943, in rates and charges for traffic between Great Northern stations in Eire, and

between Great Northern stations in Eire and Northern Ireland. These increases also apply, with certain exceptions, to inter-company traffic with the other Northern Ireland railways, including the Dundalk, Newry & Greenore. Prior to September 1, 1943, goods train rates, except for coal and livestock, included an emergency surcharge of 25 per cent. over those in operation on November 20, 1939. In coal and livestock rates the corresponding surcharge was 15 per cent. The application made to the Railway Tribunal and sanctioned by it was for an increase of 10 points in these increases, that is, from 25 per cent. to 35 per cent. and from 15 per cent. to 25 per cent. respectively. This was equivalent to an increase in the then existing rates of approximately 8 per cent. Rates for certain traffics by passenger train, before the application, included a surcharge of 10 per cent. over the pre-war rates, but other traffics, such as parcels, perishables, excess luggage, newspapers, etc., were still being charged at the rates operative before the outbreak of war. The Railway Tribunal sanctioned an increase of 10 points in the case of all passenger train traffic as from September 1, 1943, and, therefore, from that date the surcharge on the traffics enumerated became 10 per cent., whereas that on the traffics which already included 10 per cent. became 20 per cent.

Increase in Railway Rates in Brazil

The Leopoldina Railway Co. Ltd. has announced that, as the result of representations as to the effect of continuing rises in costs, the Brazilian Government has authorised an increase in goods tariffs and main-line passenger fares of 25 per cent., which is to come into effect on October 16. The increase is directed to the alleviation of working results, to the making of reasonable provision for the rehabilitation of equipment not as yet possible, and the improvement of staff conditions in pay generally. A previous increase in rates of 10 per cent. was authorised in February last year, and took effect from March 1, 1942. At the last annual meeting Mr. C. H. Pearson, Chairman of the company, said that traffic receipts, aided by the rate increase, had risen, but, on the other hand, expenditure also had grown rapidly. Coal was a predominantly adverse factor in the company's expenditure. The report of the San Paulo (Brazilian) Railway Co. Ltd. for last year, issued in June last, also referred to heavy increases in costs, arising from enhanced prices of fuel and materials, and wage improvements to meet the increased cost of living. To meet this situation a petition for increased rates was submitted last December, and became effective from July 5 last.

Sudan Railways and Native Education

The part which the Sudan Government is playing in the welfare of the Sudanese people is well illustrated in a pamphlet* by Mr. K. D. D. Henderson of the Sudan Political Service. Among the principal technical schools which have been established is the railway school at Atbara, which was opened in 1924 to educate boys as first-class artisans. In 1933 a higher course was introduced to provide better quality material for charmen. There is also an enginemens' school, where instruction is given by Sudanese and British locomotive inspectors, a school of marine engineering, and an electrical engineering school with a branch at Port Sudan. These schools aim at producing competent enginemens, engineers, electricians, and charmen. The practical result has been that during the last decade British classified staff in the mechanical branch has been reduced by 31 to 91, and other non-Sudanese staff by 461 to 370. Sudanese staff has been increased by 393 to 5,710, which includes 607 enginemens (out of 611), who now handle with a record-breaking freedom from accident and failure, the most modern locomotives, including the Garratt and the diesel-electric shunter. The traffic branch of the railways also runs a training school and employs Sudanese traffic inspectors, one of whom is now a senior inspector. The traffic staff is 96 per cent. Sudanese.

Part-Time Railway Labour

Heavy transport tasks are envisaged by the railways for the coming winter, and to help in handling the work, more paid volunteer part-time workers are being recruited. War workers, and many forms of peacetime occupations are represented by the helpers who have already formed enthusiastic groups to assist in loading and unloading goods and war freights, cleaning locomotives, and so forth, in their spare time. On a recent Sunday 800 volunteers cleaned 300 engines at 38 different depots on one railway, and 800 spare-time workers (including 260 women) helped to load and unload wagons on another line. In the morning and evenings 30 part-time workers are employed to

* "Survey of The Anglo-Egyptian Sudan, 1898-1941," by K. D. D. Henderson, obtainable from the Sudan Government Office, Wellington House, Buckingham Gate, London, S.W.1, price 1s.

clean the cars of London tube trains, and 220 women work part time as canteen assistants. The hours of duty of these volunteer workers are arranged to avoid conflicting with ordinary full-time employment, and railway part-time workers who work regularly for three or four hours are paid for their work. Recently, 55 industrial workers in a Midland area, whose plant was being overhauled, were lent for railway work for a week. In another instance, to assist local labour difficulties, a firm engaged upon intensive war production received help from railway spare-time workers who unloaded 1,500 tons of timber, lime, flour, bricks, forgings, potatoes, sugar, and cased goods from 200 wagons at weekends. Volunteer labour employed in Scotland on wagon repair forms the subject of a paragraph at page 394.

Volunteers Help Turn-Round of Wagons

Among the special steps taken by the Great Western Railway to facilitate dealing with the largest possible tonnage during the present heavy pressure, is an intensification of the practice of unloading wagons at weekends by the utilisation of volunteer labour. During the weekend October 2-3 no less than 27,000 were unloaded, breaking all previous records, and the use of volunteer spare-time labour contributed largely to this gratifying result. The volunteers concerned are paid the appropriate rate for the job and it is of interest that assistance is given by people engaged in such occupations as butchers, grocers, greengrocers, dustmen, road sweepers, insurance agents, commercial travellers, university students, women clerks, and housewives. We understand that for some time past the G.W.R. has been paying special attention to reducing the average turn-round time of wagons at terminal stations with the result that it has secured the quickest turn-round recorded on its system, an achievement towards which the use of volunteer part-time labour has been of considerable assistance.

The Bavarian "Ruhe" Signal-Aspect

The reference in an editorial note in our issue of October 8 to the new German double-quadrant 3-aspect junction signal (one similar to which we omitted to say had been used on the old Swiss United Lines for some years before 1886) reminds us that the former Bavarian lines used for a long period signal arms working in two quadrants, but for another purpose. On these lines, contrary to practice in other German states, the stop indication on a starting signal was absolute, and applied equally to running and shunt movements. It thus became necessary to provide means of showing when shunting might take place; the stop indication sufficed to prohibit it without using the special signal seen elsewhere. This was done by lowering the arm in line with the post and showing a blue light at night; the aspect was known as *Ruhe* (rest, repose), and was seen when no train was expected. Interlocking compelled the signalman to change a starting signal arm from vertical to horizontal before he could clear any home signal allowing a train to run up to it. With the introduction of standard signalling on the Reichsbahn, a time limit was set to the use of the *Ruhe* and other special signal aspects.

Express Locomotive Adhesion

Many of the British high-pressure Pacific locomotives of today show a marked tendency to slipping when getting away from rest; and the indications are that as the demand for power in the largest passenger types increases, so the maximum permissible loading of $67\frac{1}{2}$ tons on three pairs of coupled wheels may become insufficient for adhesion. There are two ways in which the deficiency might be made good; one is the application of booster cylinders to the trailing axle, and the other is the use of eight-coupled wheels; but it cannot be said that as yet either expedient has proved popular in Great Britain. Both in the use of boosters, and of eight-coupled wheels in passenger service, the late Sir Nigel Gresley made the only experiments that have been tried in this country. So far as passenger service is concerned, boosters were applied experimentally to two classes of L.N.E.R. Atlantics, but apparently without any great success, as both installations were later removed. In the United States boosters are almost standard equipment with many locomotive classes (though perhaps more of them freight than passenger), and this suggests that little complaint can be lodged against booster gear on the ground of either efficiency or reliability. Similarly the use of eight-coupled wheels in Great Britain for passenger service has been confined to the six "Cock o' the North" type 2-8-2 locomotives designed by Sir Nigel for the Edinburgh-Aberdeen service of the L.N.E.R., with 6 ft. 2 in. driving wheels. In the United States few types are more popular in North America for heavy express work today than the 4-8-4; but already one of the British 2-8-2s has been converted to the 4-6-2 wheel arrangement.

The Threshold of a New Era in Transport

THE heading of this editorial was the title chosen by Sir William V. Wood for his inaugural address as President of the Institute of Transport. The members of the Institute have every reason to be gratified that he has seen his way to preside over its affairs during a year when his railway duties will be especially onerous. Sir William made an auspicious beginning to his term of office by delivering, on October 12, an address which was written in easy and, in places, almost conversational style. A synopsis of his thought-provoking remarks is given on a later page in this issue and it will be seen that he touched on a variety of problems which will have to be solved in the near future. Wisely, we think, Sir William did not attempt to deal with any one subject exhaustively, though he expressed emphatic opinions about several matters of great importance at the present stage of transport development. A few comments on two or three of these controversial points may be helpful to our readers in formulating their own views.

First of all, we agree whole-heartedly that a thorough investigation of facts should be held before any decision is reached about bringing any or all forms of transport under public ownership. So far no clear and detailed justification for a sweeping change of this kind has been put forward and it would be astonishing if a British Government sought to adopt a policy of "whole-hogger" in dealing with transport, merely because certain politicians consider that on principle the state should own and operate all means of communication. We also share Sir William Wood's dislike of subsidies to transport agencies or to other industries through the manipulation of transport charges.

Turning next to the reference to the charging powers of the various carriers of passengers and merchandise, we venture to suggest that Sir William expects too much to happen if steps are taken to put rail, road, and water transport on an equal footing. We have previously referred to the importance of the inquiries now being conducted by the Road & Rail Central Conference with the object of devising a system of correlated freight charges. These inquiries involve the revision of the existing railway classification of merchandise and of the conditions under which merchandise is at present accepted for conveyance by rail and road. Agreement between the negotiating parties, we cannot help feeling, will be of little avail unless it is confirmed by statutory authority. Similarly, it is doubtful whether voluntary fusions or associations of road hauliers within specified regions can be completely effective as a means of stabilising rates and services. One or two "free-lance" operators might ruin the best-laid schemes of the associated concerns. To group road undertakings satisfactorily, it would seem desirable to include all the operators in each region and to have in reserve power to insist on every member of the "combine" observing the conditions approved for the area. A haulier would then be aware that, if he broke the regional regulations, he risked the loss of his licence. If we are ever to attain a balanced scheme of transport in all its forms, there is a great deal to be said for the conclusion reached by many American thinkers that government regulation should be applied all round and adjusted from time to time to suit any marked change in circumstances.

The advocates of railway unification did not receive any encouragement from Sir William Wood. In his view, amalgamation under the Railways Act of 1921 went too far. *The Railway Gazette* pointed out during the consideration of the "grouping" proposals that it would be unwise to build up new companies of unwieldy size, but twenty years have passed and it is too late to undo the replanning carried out in 1923, largely on the recommendation of the Railway Companies Association. After all, some of the weaknesses which Sir William has observed on the L.M.S.R. system are admittedly due to over-centralisation. The larger an undertaking becomes, the more grows the need for a judicious devolution of responsibility to its officers stationed at the outposts. This principle was followed by the other Northern company from the start. As soon as Mr. William Whitelaw was appointed Chairman of the L.N.E.R., he convinced his Board of Directors that the organisation of the new company should provide for three centres of energy at London, York, and Edinburgh, controlling the Southern, North Eastern, and Scottish areas respectively. At each centre a Divisional General Manager was placed in charge with extensive and well-defined authority. Each Area Manager was given the assistance of a Passenger Manager, Goods Manager, and Superintendent, and these officers were in turn entrusted with ample powers. This organisation had the merit of preserving local contacts and avoiding constant reference to the Chief General Manager at Headquarters. We believe that the public, and especially traders and shipowners, appreciate the benefit of having access to divisional officers who can settle with them directly all but important questions outside the run of normal business.

Another example of the advantage of delegating authority is to be found in the dock department of the Great Western Railway. The absorption of the independent Welsh Railways in 1923 transferred to the Great Western one of the largest dock systems in the

world. To ensure the efficient supervision of this new branch of business, a Chief Docks Manager was appointed with headquarters at Cardiff. He has complete charge of the dock working and estates at all Great Western ports and is directly responsible to the General Manager so that there is no danger of circumlocution in handling shipping matters. We admire the frankness with which Sir William explained his difficulties and hope that he will proceed to develop his ideas for passing out work to provincial centres.

Inevitably the address contained a good deal about research and analysis of working costs. The L.M.S.R. has for many years attached a high degree of priority to the use of these weapons in the never-ending pursuit of improvement and economy. As we explained in an editorial article on industrial research in our October 1 issue, the other main line companies and the L.P.T.B. have also been active, though of necessity their methods of procedure are not uniform. Nobody, we imagine, will dissent from the reference to the relations between the railways and their employees—indeed, we do not know of any other industry in which equally elaborate machinery already exists for airing any grievance and getting at the facts of the case.

Sir William wound up with a rapid survey of the post-war changes which the transport industry will be called on to meet. To aid in adapting the carrying services of the country, he said, was the chief function of the institute over which he now presides. He has done a useful piece of work in summarising the problems which the future has in store and his address will repay careful study when it is published in full in the *Journal of the Institute*. May the discourse be the prelude to a happy and successful year in the presidential chair!

Politics and the American Railway Position

ON May 24, 1943, after a lengthy inquiry, there was filed with the Economic Stabilisation Director of the United States a report of a Railway Emergency Board which recommended an increase of 8 cents an hr. to more than a million railway employees in non-operating grades. As a result of union dissatisfaction with this finding, President Roosevelt has asked the railway companies to enter into new negotiations, with a view to regarding the present 48-hr. week as a 40-hr. week *plus* 8 hr. overtime worked at time-and-a-half rates. The 8-cent advance alone would have cost the railways \$200 million annually; the new proposal would roughly double this addition to the wage bill.

The railways point out that despite the declared intention of the U.S. Government to prevent inflation, this is the third time in three years that boards appointed by the President to inquire into railway wage demands have made their reports, judicially based on the evidence given; that in each case the men's unions have contested the findings; and that in each case the reports have been referred back by the President to the boards concerned for further consideration, and always in the labour interest and not that of the railways. In the autumn of 1941 a board recommended a general advance in railway wages; the labour leaders were not satisfied and ordered a nation-wide strike; and in the end the President backed the labour claim and caused the recommended advance to be increased.

On May 21, 1943, another board appointed by the President made certain recommendations as to the wages and conditions of diesel locomotives; the latter demanded payment on the basis of the horsepower of their locomotives, instead of, as hitherto, the adhesion weight, and also that a third man should be carried at the head end of every multiple-unit diesel-electric locomotive. Certain concessions were agreed by the board and recommended to the President, but again the men's unions violently dissented, and again the President has referred the whole question back to the board concerned for re-examination—in the labour interest. The case of the non-operating employees referred to in the previous paragraph is the third, and here the Presidential pressure is even more precise, for the board is given direction as to what its finding ought to be. In such circumstances the railways not unnaturally ask what purpose, if any, is served by the appointment of these boards of inquiry; for such frequent Presidential intervention tends to destroy in all industries the possibility of wage settlements arrived at by orderly procedure and based on evidence. The railways also point out that in relation to the cost of living, railway wages are considerably higher than before the war; although the employees, on their part, contend, and doubtless correctly, that in present conditions their work is much more exacting than in peacetime. Nevertheless, advances to railway employees on the scale proposed will justify the farm *bloc* in Congress in demanding further advances in the price of farm products, and so the vicious inflationary circle goes on.

The advance of \$400 million now proposed to non-operating employees coincides with the reduction in freight rates ordered by the Interstate Commerce Commission, which is costing the railways \$300 million. One result of these simultaneous changes would be a loss of \$350 million to the nation in taxation, for the railways would

be earning a net operating revenue less by some \$700 million than previously. It is also contended by the railways that their property is being worn out rapidly, in war conditions, because of their inability to obtain adequate new equipment and maintenance materials, and that whereas by saving on current earnings they would have been in a position to finance the extensive replacements and renewals that will be essential in the post-war recovery period, the present policy of the Federal Government will make any such savings impossible. Thus, they claim with some bitterness, they are being rewarded for what is generally considered as one of the greatest of the wartime achievements of all American industries in helping the Government to carry on the war. In the endeavour to make out a good case, there may be some exaggeration of the railway position, but it is difficult to avoid the conclusion that the dice are loaded against them, or that politics are playing a considerable part in the present trend of affairs; although politics were to be "adjourned" during the war, and there were to be no individual profits from war conditions, neither of these laudable aims is being fulfilled.

Railway Canteens

THE recent statement by Sir James Milne, General Manager of the G.W.R., when opening a new staff canteen at Reading, that 31 canteens had been opened by that company since the commencement of the war and that 25 more were in process of building, affords some indication of the steady progress which is being made in this important phase of staff welfare. Canteens and dining clubs existed to a limited extent before the war, but for the most part they were confined to the larger stations and depots where considerable numbers of staff were employed, many of whom lived too far from their work to enable them to return home for their midday meal. Messrooms, provided in accordance with the requirements of the Factory Acts, were also available at many depots, and provided facilities for the heating of food brought by the staff from their own homes.

The changed conditions brought about by the war have necessitated the provision of additional and more comprehensive facilities, and the rapid development of railway canteen services is in conformity with the general industrial policy of ensuring that workers are adequately fed. Apart from domestic feeding problems directly connected with the rationing of foodstuffs, there are a number of other features which have given added weight to the importance of canteen facilities. For instance, the wives of many railwaymen are themselves working in war factories or, in numerous instances, on the railways, with the result that the preparation of a cooked meal at home is out of the question. Furthermore, public refreshment establishments, including British Restaurants, are, generally, so crowded that it is frequently impossible for railway and other workers to obtain meals at such places within the time at their disposal. Canteen facilities are of particular value to trainmen whose irregular turns and oftentimes extended hours of duty make the food problem particularly difficult. To these men the knowledge that a canteen is available at the journey's end is a definite help and such facilities undoubtedly contribute materially to the smooth working of the railways. Although in some instances it has been possible to adapt existing buildings, the majority of the canteens provided or authorised by the railway companies entail the construction of entirely new premises, and difficulties of labour and supply have inevitably delayed the provision of facilities which are as urgently desired by the companies as by the staff.

The method of operation varies; in numerous instances the canteens are controlled by a committee of management composed of members of the staff, and in other cases the catering rights are let to contractors. At some of the larger canteens, arrangements have been made for the establishment of subsidiary canteens at adjacent depots to which hot meals are despatched each day by means of insulated containers capable of keeping food hot for an appreciable period. In addition to the canteen facilities now being provided, the British railways possess a number of mobile kitchens capable of being sent at short notice to any place where temporary feeding arrangements are required. Many of these mobile units have been gifts from overseas and have formed the subject of special presentation ceremonies which have been reported from time to time in *The Railway Gazette*.

AUSTERITY LOCOMOTIVES IN INDIA.—Recent messages from New Delhi have directed attention to the good work which is now being performed on the Indian railways by American-built "austerity" locomotives of the "MacArthur" or 2-8-2 wheel arrangement. Large numbers of these units are said to be at work. These are understood to be the first American-built war locomotives constructed to the Indian broad gauge of 5 ft. 6 in.

October 15, 1943

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

What is "Private Ownership?"

London. October 11

SIR.—May I be permitted to traverse the rejoinder of "The Writer of the Articles" to my letter to you of September 24?

At the outset, he finds my particularisation of the L.P.T.B. "unfortunate," but surely one cannot avoid discussing the board when the whole point of the controversy centres on whether or not the Board is a suitable model for the future "public ownership" (I use the expression without qualification or apology) of all transport facilities. However, by acknowledging that the stockholders of the board "do not own the assets," he tacitly retreats from the position previously taken up, implicitly or explicitly, by him and others who have written on the same subject, namely, that because private investors "provide the capital" they are, *ipso facto*, the "owners" and so, apparently as a matter of moral principle, ought to be in a position to protect their capital against risk, by means of direct control over the management. We progress, for to contend that because capital is privately subscribed for any purpose, there is therefore some inherent right to "own" and control the management of the assets representing that capital, is merely to cloud the issue with prejudice. The point is what are the terms on which the capital is borrowed. If it is borrowed on what may be described as "public board" terms, then there is neither ownership nor any right to control the undertaking, save in the event of default. If the private investor does not like it that way, then he need not subscribe the capital, but somehow or other he seems to like this type of investment. Certainly, the "expropriated" holders of ordinary shares in the undertakings acquired by the L.P.T.B. and the P.L.A. were, and are, in no haste to unload the new Public Board stock they received in exchange for their former shareholdings, with all the rights of appointing and dismissing directors, of which your correspondent gives such a glowing account.

But I am not alone in my views. In this connection, the reference made by "The Writer of the Articles" to the *Economist* of October 2 is, shall I say, a little unhappy, because the first few lines of the *Economist's* paragraph (not quoted) happened to direct attention, in precise terms, to the absence of effective control by shareholders over the property they own. Thus, the *Economist* (*loc. cit.*) stated:—

There is very little disagreement as to the ill-effects of the divorce between ownership and effective control of joint stock enterprise which has resulted from the spread of investment in recent decades, but there is much doubt as to the remedy.

I did not refer to the idea of "management by owners" (that is, real owners) as Victorian, but to the notion, held by your contributor, that control of the management by shareholders is effective in practice. On this point the *Economist* is on my side and not on his. I must leave it to your readers to decide which of the opposing views of the effectiveness of the system of control of directors by shareholders merits the adjective "ridiculous," mine (and the *Economist's*) or his.

I am afraid that what Mr. Herbert Morrison said in the House about the L.P.T.B. does not prove the novelty of the L.P.T.B. arrangement, because Mr. Morrison happened in various respects to be wrong. Much of the quotation cited by "The Writer of the Articles" applies exactly to the shareholders of both the water companies which preceded the Metropolitan Water Board, and of the dock companies which preceded the Port of London Authority. In both cases the relevant Act abolished the right of the shareholders to elect the directors and in both cases only "gave them a certain right to apply for a receiver in certain circumstances." Again, there was previous agreement by the private owners to accept "paper," in the case of both the P.L.A. and the M.W.B., and the great bulk of the interests transferred to the L.P.T.B. Mr. Morrison's enthusiasm for his child thus led him to an oversimplification, when he said:—

Never before had Parliament compelled capitalists to take paper in compensation for an undertaking and deny them a voice in the election of directors.

Where is the novelty of the L.P.T.B.?

The "C" stockholders of L.P.T.B. will doubtless be glad to learn that they possess "a complete monopoly of public transport inside the London area." Some of them, however, will have an uneasy feeling that there are alternative means of transport not yet brought within the scope of this "monopoly," such as bicycles, private cars, taxis—and walking. If the implication is that the Board can charge what it likes because it has a monopoly, it is curious that this obvious course was not taken before the war so that the "C" stockholders could then have had the remaining few ounces of their pound of flesh. However this may be, would not any "National Transport Board" be endowed with a far more effective monopoly?

May I suggest that this controversy should now be diverted into the more fruitful channel of what should be the new type of instru-

ment for the exercise of public supervision over public utilities, including those publicly-owned, so as to avoid the unimaginative, routine-minded, petty interference on marginal trivialities, which is what government control exercised through Whitehall Departments inevitably involves with a Civil Service constructed on present lines? Whether we like it or not, the State is going to have a bigger say in the oversight of public utilities, if not of productive enterprise, and the wise man will try and think of some more constructive policy than "Back to 1939."

Yours faithfully,
"CROSS BENCHER"

A National Transport Programme

25, Green Lane, Northwood,
Middlesex. October 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—May I invite the attention of the author of this pamphlet to the figures of "conveyance costs" which he quotes in page 12? I am sure he has no desire to mislead his readers, but surely he does so when he bases his statement that the "railway is the cheapest form of transport ever invented . . ." on such figures. He takes a train load of 522 tons and states that "the costs were on the basis of full or half-full loads for each of the units and on the assumption that this basis continues throughout the year." The average train load on the railways in 1938 (and the figure has varied but little for many years) was 125 tons, and even on the basis of the author's own figures, this average load would tell a very different story, both absolutely and relatively. That is not all, however; the figures do not include terminals, which presumably means that they do not include the cost of transhipment *en route*, or of marshalling and shunting, all of which are incidental to (and under present methods of operating inevitable) conveyance. Add the costs of these expensive operations (more time is spent on shunting than on train working) and then add the cost of getting traffic to and from the train, and you get the real reason why competition with the railways is so effective—it is in operating, not in track costs, that the weakness lies.

What the steam locomotive running on rails can do, and what it actually does, are vastly different things. The average train load can be brought up to 500 tons, and transhipment, shunting, and marshalling practically eliminated, by using the steam locomotive and the train to haul heavy loads at high speeds with few men, and by feeding those trains by the road vehicle, instead of the train.

There will then be no need to think of nationalisation or any other political device, or of price control. The problem is an operating problem and the solution is to replace present operating methods by the more scientific methods made possible by the development of the internal combustion engine.

Yours faithfully,
FREDERICK SMITH

[Mr. Smith believes that railway operating methods offer great scope for improvement, and he uses the conveyance costs given in the pamphlet to air his views on operating. We said in Chapter II that "transport cannot be fully efficient . . . unless there is good loading" and "unused freight capacity is waste" and "unless the transport system is planned as a whole the waste which is involved cannot be eliminated or minimised." Presumably, Mr. Smith agrees with these statements; and the only difference between us is in the approach. But we suggest that the table of conveyance costs given in the pamphlet cannot be interpreted in the way Mr. Smith attempts to do. We should have thought that with the description of them we gave, together with our answers to other correspondents, all readers by now would have understood them. Given 100 or 50 per cent. pay load and allowing for the other factors we have already mentioned, the costs represent the facts. They cannot be related to overall average figures, and certainly not to the carryings of 1938 which ignore the spare capacity of the railways arising from the unequal competitive position *vis-à-vis* road transport.—ED. R.G.]

Pennsylvania 6-4-4-6 Locomotive

66, Eton Rise,
Haverstock Hill, N.W.3. September 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—With reference to the article on the above in your issue of September 3, may I point out that 16-wheel tenders were fitted to some 4-8-4 locomotives built by Baldwin for fast passenger service for the Atlantic Coast Line in 1938. These engines were described in the *Railway Age* of December 24, 1938, and the tenders were stated to be the first ever fitted with 8-wheel trucks.

Yours faithfully,
E. C. POULTNEY

The Scrap Heap

A London Transport test has revealed that it takes a bus conductor 6½ min. to give tickets and change to 25 persons. When the same number offer the right money, it takes only 2½ min., a saving of 65 per cent.

On behalf of the L.M.S.R. Headquarters staff, a cheque for £300 was handed on September 27 to the Dean of Canterbury, Chairman of the Joint Committee for Soviet Aid, to endow two beds in the Stalingrad Hospital. The aim had been to endow one bed, but double the amount required for that purpose was forthcoming.

IMPROVING OUTPUT

"I have heard of a plant being replaced at considerable expense in order to introduce a new gadget which it was hoped would improve the rate of output. The improvement was fully effected but at the first stoppage of the plant for overhaul it was found that the gadget had not been connected and the improvement was due entirely to replacing the old by new parts."—From Sir William Wood's Presidential Address to the Institute of Transport.

SAYING IT WITH SUNSHINE

In the course of demolitions at Liverpool Road Station, Manchester, there has been unearthed what is described as "a brass sundial dated 1833, believed to be used in connection with the timing of trains." Thus should be laid for ever (at least so far as the year 1833 is concerned) the vile and prejudiced slander that "the sun never shines in Manchester." If this version of the function of an undeniably interesting relic is correct the Manchester of 1833 was so much of a sustained sun-trap that railway time-

tables were adjusted by reference to the genial and unremitting rays of Phœbus Apollo. It is a kindly and consoling thought; and there is no one now alive to tell us whether the trains of 1833 ran to time or whether passengers, even in those obviously enlightened days, were sometimes left cooling their heels on empty platforms and wondering whether their journey was really necessary. If they were it was just as obviously the business of the sundial to improve the shining hour by supplying a motto that would enjoin patience or the pursuit of wisdom. There are plenty of them and they have all been used as inscriptions for sundials. "No man is wise at all hours," "The sunshine teaches not without the shadow," "It is not possible to hold the day; it is possible not to lose it" (or in other words "Don't miss the train"), "The night cometh," "Serene I stand among the flowers, and only mark the sunny hours." Railway travel must have been worth while in 1833 if you could sit in the sunshine on Liverpool Road Station and meditate such undoubted gems of varied wisdom.—From "The Manchester Guardian."

SERVICEMEN'S KITBAG EXPRESS
Servicemen changing railway stations in Sheffield about three-quarters of a mile apart are being transported with their kit by an Army lorry. It is called the "kitbag express." Similar services are operating in some other large towns.—From "The Yorkshire Post."

Next December the Christmas tree, which should brighten the front parlour, probably will be right where it is today—standing unadorned in the woods, according to a Canadian Government statement issued recently. Cutters, dealers, consignors and retailers are warned that they will be



"All I said was, 'I've often wondered if you fellows ever miss the train after you've waved the flag'"

(Reproduced by permission of the proprietors of "Punch")

handicapped by a shortage of railway equipment, difficulties in obtaining labour, restrictions on the use of lorries, and by the acute shortage of the type of twine used for binding trees in bunches for consignment. The Transport Controller, Mr. T. C. Lockwood, states that instructions will be issued to the railways prohibiting the transport of Christmas trees in flat and open-top wagons, or in box wagons suitable for carrying grain and other essential commodities requiring such equipment.

RAILWAY CHANGES

Famous railway engines that in peacetime never left main lines are today hauling war freights along small routes to out-of-the-way places. This is one of many changes that the war has effected on British railways. Restaurant and sleeping cars have been converted into ambulance units. Camping coaches house railway Home Guards. Kitchen cars are now often used to prepare hot meals for canteens. Perhaps the type of railway vehicle to have undergone the most complete wartime change is the open saloon-type carriage. In peacetime these carried sports enthusiasts to Wembley and excursionists to the seaside. Now prisoners-of-war travel in them. Armed guards patrol the centre gangways.—From "The Yorkshire Post."

TAILPIECE

(Winter timetables are now in operation)

When swallows wing across the sea,
And leaves are dry on bush and tree,
And rivers run in autumn spate—
Heigh ho!—

The winter schedules operate.

When fog compels the trains to slow,
And gusts along the platform blow,
And tracks with early frost are pallid—
Heigh ho!—

The summer schedules are invalid.

When nights are long and days diminished,
And summertime reliefs are finished,
And early blackout starts anew—
Heigh ho!—

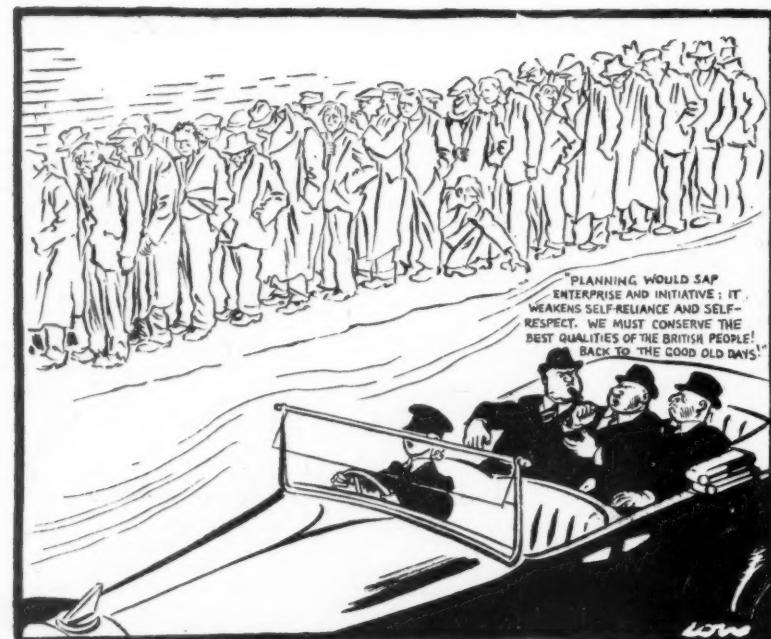
The trains run differently too.

E. C.

THE GOOD OLD DAYS

(Reproduced by permission of the proprietors of "The Evening Standard")

In a leading article commenting on this cartoon, "The Sunday Times" asks, "Who and where are the originals of Low's three plutocrats? Who among living men talk the senseless stuff he puts into their mouths?" On the other hand, it must be remembered that the number of unemployed in Great Britain in January, 1933, was 2,979,425



OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Railway Convention Committee

The interim report of the Railway Convention Committee of the Central Legislature has been issued. It endorses a proposal that, until a new convention is adopted the allocation of surplus between railway reserve and general revenue be decided each year on a consideration of the needs of each. The Committee added a rider to the effect that "appropriation to railway reserve should be the maximum consistent with a fair allocation to general revenues, as determined from year to year by the general budgetary situation arising out of the present emergency." The Committee is of opinion that additional appropriation should be made to the depreciation fund during the war, as an emergency provision to cover the excessive wear and tear to which railway assets are being subjected. It recommends that a comprehensive inquiry be made as early as possible into lives of assets, and as to a consequent normal rate of contribution to the depreciation fund; and into other matters, such as the level of prices, affecting the fund.

CANADA

Cereal Traffic to U.S.A.

Despite the shortage of railway vehicles, Canada sent the U.S.A. about 45 times as much barley and oats in the crop-year ended July 31 last as it did in 1938-39. Preliminary figures prepared by the Board of Grain Commissioners indicated that in the 1942-43 crop-year more than 90,000,000 bushels of oats and barley crossed the border. United States imports of Canadian oats, barley, and rye in 1938-39 were less than 2,000,000 bushels. In addition, almost 1,500,000 bushels of Canadian flaxseed and nearly 5,000,000 bushels of Canadian rye went over the border during the crop-year ending July 31 last.

UNITED STATES

Recovering Steel from Bridges

To recover some 900 tons of steel, the New York Central System recently dismantled and removed the bridges which carried its New York-Chicago main line and its subsidiary, the West Shore Line, across the dry bed of the abandoned Erie Canal near Clyde, New York State. The N.Y.C. main line is four-tracked, and the W.S.L. runs parallel to it at a distance of about 800 ft.

The canal bed was crossed by 116-ft. skew truss spans with ballasted deck-trough flooring, framed into the lower chords of the trusses, and about 23 ft. above the floor of the channel. The canal bed was filled with 8,000 cu. yd. of material from an adjacent borrow pit, brought to the site in dump cars, and manoeuvred into position by bulldozers to a level 3 ft. below the bridge floor. The floor system then was blocked up on to the new embankments by means of timbers and old sleepers, with wedges, and with 12 in. by 12 in. stringers supporting each track rail. A good deal of the preparatory work on the dismantling of the trusses, after the tipping and the packing up of the tracks, was done without imposing any speed restrictions; but a limit of 10 m.p.h. was imposed while the trusses were in course of being cut up and removed, and cranes required exclusive possession of one of the four main-line tracks while the

N.Y.C. bridge was being tackled. Each of the four tracks then was closed in succession as the tracks themselves were dismantled, the bridge floor cut up and removed in sections, as much as possible of the packing timber salvaged, new ballast dumped, and the track relaid.

The dismantling of the bridge and the relaying of tracks 1 and 2 was completed in three days, as was the work on tracks 3 and 4. The efficiency of modern bridge-removal methods and the demand for scrap made worth while this recovery operation; otherwise the canal bed would have been filled in and the spans left in position. Much credit is due to the railway engineering-staff for the minimum interference with traffic while the work was in progress.

ARGENTINA

Institution of Civil Engineers

At a meeting of the Buenos Aires Association of the Institution of Civil Engineers on August 26 last, Mr. J. E. Sandham, B.Sc., M.Inst.C.E., Maintenance Engineer, Buenos Ayres Great Southern and Buenos Ayres Western Railways, read a paper on "Mechanisation as an Aid to Permanent-Way Maintenance." The Chairman of the Association, Mr. D. G. MacCormack, B.Sc., M.Inst.C.E., Chief Engineer, Central Uruguay Railway, presided.

Engineering & Transport Meeting

On August 25 last, the members of the Centre of British Engineering & Transport Institutions in the City of Buenos Aires held a reception at the Plaza Hotel. This function replaced the customary annual dinner of the pre-war period, which has been suspended temporarily. The specially-invited guests were the British Ambassador, Sir David Victor Kelly, K.C.M.G., M.C.; Captain H. A. Forster, R.N. (Naval Attaché); Colonel R. E. M. Russell (Military Attaché); Air-Commodore A. A. Walser, M.C., D.F.C. (Air Attaché); Mr. C. B. Jerram (Commercial Counsellor); and Mr. A. H. Marlow (H.M. Consul-General). The Chairman of the Buenos Aires Association of the Institution of Civil Engineers, Mr. D. G. MacCormack, B.Sc., M.Inst.C.E., Chief Engineer, Central Uruguay Railway, who presided, welcomed the Ambassador and the other guests in a short speech in which he traced the growth and development of the Centre since its formation a little over twenty years ago, enumerated the various institutions affiliated to it, and explained the scope and nature of its activities. He stated that, after the war of 1914-19, it had been felt that some tonic was needed to build up and maintain British engineering traditions on the same plane as those of the mother country, and to see that the students had something approaching the same facilities for learning as those enjoyed by their fellows throughout the British Empire. Addressing the Ambassador, the speaker remarked that the career of the Centre had been followed with keen interest by Sir David Kelly's predecessors, and that they trusted that the same kindly interest in their affairs would be continued by His Excellency.

In his reply, the Ambassador expressed his appreciation of all that Mr. MacCormack had explained of the strength and work of the Centre. He said that, although he had no technical knowledge, he had gained great confidence in the future of the heavy industries after a visit to plants in Liverpool and Manchester in June last year. The

managers of those plants had explained to him the great developments which had taken place in the engineering industry, and had assured him that there was no reason why those developments should not be applied with equal success to post-war business.

TANGANYIKA

New Road Service

A new road service has been opened to the Southern Highlands by the Tanganyika Railways Administration. It is meeting with some initial difficulties, reported to be due to shortage of skilled drivers and mechanics, resulting in an abnormal number of breakdowns, but the scheme is promising on the whole.

With a view to reducing vehicle shortage the Government has taken power to control all transport vehicles where this is considered necessary. The Order hitherto applied only to the Southern Highlands. The Economic Control Board stated on August 27 that the supply position regarding motor tyres and vehicles was still acute, and that the shortage of vehicles was likely to prove the more serious of the two. All outstanding applications could not be met, but as vehicles arrived they would be allocated where they would make the greatest contribution to the war effort.

SPAIN

Constructional Progress

Of the four sections of the Zamora-Coruña line, now being constructed by the National System of Spanish Railways, that between Santiago and Coruña was completed and opened to traffic early in the present year. The other three sections are under construction, and progress is satisfactory. That from Zamora to Puebla de Sanabria, 108 km. (67 miles), the estimated cost of which is 42 million pesetas, is expected to be opened to traffic before the end of this year. The cost of the section from Puebla de Sanabria to Orense, 143 km. (89 miles), is estimated at 185 million pesetas, and that of the section from Orense to Santiago, 130 km. (81 miles), at 95 million pesetas. The line is to be completed within two years. Single track only is being laid (of broad gauge); but all fixed works, such as bridges and tunnels, are being constructed to accommodate double track at some future date. Notable works include the Esla viaduct and the Padernelos tunnel; each is the longest of its kind in Spain. The line is being laid throughout with 45-kilogramme rails, each 18 metres in length, with 31 Spanish-oak sleepers to each rail length. Although the line is to be operated with steam locomotives, electricity is to be used for all other services, such as workshops, lighting, and signalling, for which purpose mains are laid throughout for a 3,000 V 142 kW supply.

Cuenca-Utiel Railway

The construction is nearing completion of the Cuenca-Utiel Railway. The length is 113 km. (70 miles), and only one section, 29 km. (18 miles), remains to be completed. The latter is the most difficult and costly of the whole line, due to the broken nature of the country, which has rendered necessary the construction of three large viaducts, those of San Jorje, Gabriel, and Narboleta. The line will form a link between Cuenca and Utiel, and will provide through transit between Madrid and Valencia, saving a distance of nearly 100 km. (62 miles). Over the new line the journey will take only some six hours, as compared with about ten hours by the present route via La Encina.

The Threshold of a New Era in Transport

A summary of some of the principal points made by Sir William V. Wood, President, L.M.S.R., in his inaugural address to the Institute of Transport

SIR WILLIAM V. WOOD, in the course of his inaugural address to the Institution of Electrical Engineers, London, W.C.2, on October 12, said that for a body such as the Institute, wartime conditions had been difficult, and the Institute had been fortunate in having had Mr. T. E. Thomas and Mr. J. S. Nicholl as its Presidents during the past four years; it was indebted to them and to Mr. Crews and his staff for successfully adapting its activities to the varying conditions of those years. It was gratifying to find that the level of 5,000 members first attained in 1939 had not only been held, but had increased to over 5,300 at the close of last session.

Referring to the contact he had maintained with men of all ranks in the L.M.S.R. service who had become prisoners of war, and with others who were serving with the Forces abroad, Sir William Wood commented on the fact that one of the most striking things in their letters was the desire to study transport subjects and to make themselves more proficient in their work when they returned. The resources of the Institute had been of great value to them vocationally.

Value of the Institute

In the new world into which we were moving, the value of the Institute to the all-important service of transport, so well foreseen by Sir George Gibb twenty-four years ago, would be great. It was not easy to discuss satisfactorily the war period from which they were emerging. In July he had read a letter in *The Times* which very properly, praised the great services rendered to the nation by coastal vessels and their crews during the period of heavy bombing here, but it had gone on to refer to the dislocation of land transport in that period. In fact, throughout the whole of that period, inland transport had carried on, despite blackouts, alerts and bombs, and week by week it had moved a much greater traffic than before the war.

The epic story of the evacuation through Dunkirk by a host of large and small vessels, and the rapidity with which the army had been transported to its bases from the disembarkation points on the South Coast, was well known. Less was known of the many arrangements made to meet novel transport requirements caused by bombing, or evacuation, or re-arming. Some of the members of the Institute might have read the comments of American observers, who had been impressed by the number of alternative railway routes available here, due to the private enterprise which had provided them, compared with the available routes on the carefully-planned Government-owned railways on the Continent, which, no doubt, were in accordance with the "blue-print" of uniformity, but were lacking in versatility. That was only one illustration of the debt which the nation owed to the whole transport system of this country, not only during the period of heavy bombing, but throughout the war. It was a system (or, to some, lack of system) which was provided and developed by private enterprise to meet public requirements in times of

peace, and which with great elasticity and resource, had fulfilled all necessary calls on it in the time of greatest national need.

Public Ownership

Sir William Wood went on to say that some prominence had been given to a statement by a member of the Government, urging that transport should be brought under public ownership, so as to ensure the maximum and most efficient service. The surprising remark had been added that controversy on this should be limited, as there was considerable agreement on it among politicians. Sir William would have thought that before there was agreement amongst politicians there would have been reasoned, practical consideration of the merits or demerits of the existing transport facilities from the viewpoint of the public which used them. Only then would it be possible to consider what further action should be required, and the form it should take. He did not believe in standing still, but he was a firm believer in weighing the facts before moving in a critical matter of this kind. Other forms of transport were not under the unique obligation of the railway companies to give an annual account of their stewardship to a court of law, so that the court could report as to whether they had conducted their undertakings with efficiency and economy, but from what he knew from the larger non-railway undertakings in Great Britain, the industry generally could do so if required. There could not be 100 per cent. efficiency in any progressive business, as almost any development carried with it the chances of success or failure; but if a "blue-print" were to be introduced in an endeavour to ensure success, it would kill initiative, and with it the spirit which had created the developments of this country in the last 100 years.

Although there was much he would like to see done to improve the transport industry in this country, he could not see them being done, or even the present standards being maintained, under State ownership or State management, responsible to Parliamentary control. Science had its place and an important one, but the day by day conduct of the various services of a comprehensive transport undertaking was an art which could not work properly to rigid rules either in war or peace.

Special Demands on Railways

It had been suggested that transport under State ownership would be a means to regulate the spread of capital outlay or to perform social services for nothing or at cheap rates. He had heard no suggestion that the Post Office, for example, should give free postage to certain specified people; but the railways had been called on to undertake special works to relieve unemployment, to charge low rates for shipment coal, and low fares for workmen. Subsidies to individuals through transport did not necessitate State ownership or management of transport. There was, however, clearly a proper limit, and if, for example, all fares were workmen's fares, the business could not be self-supporting.

In Great Britain, Sir William said, he could see three roughly distinct groups of

post-war problems: (1) The relations of the parts of the transport industry to each other, and of the whole to transport users and the State; (2) those arising from the natural genius of the people in the industry to find new and better ways of conducting it; and (3) those arising from the effect of the war on transport requirements at home, on the seas, and abroad. On the first, he thought recent experience pointed to an easing of the acute differences of, say, ten years ago, which had arisen in the main from the competition between the young road-motor transport industry and its older rivals. He thought the way was now clear for the adoption of complete equality as to charging powers, leaving the users of public transport free to choose the system of transport they preferred to use at a particular time; this would achieve a natural allocation of traffic between the various forms of transport, and would permit a system of correlated charges, not necessarily uniform, agreed between the forms of transport. This in turn should lead to routing of various traffics, "through" movements of both passenger and merchandise traffic by two or more forms of transport, and pooling all resources. There was also a need for improved roads, docks, and canals, and these questions should not be considered in isolation, but in the light of transport needs as a whole.

Equality of Obligation

Sir William did not doubt the desirability of regulations, laid down by Parliament and applied by a tribunal, as to the reasonableness of facilities and charges, the permissible return on the capital employed, and the consequential accounting records, but he asked whether the time had not arrived when all forms of public transport should accept the obligations attaching to public services—publicity and measurement of their operations, and the access of their users to a simple tribunal as to the reasonableness of charges and facilities? He would like to see the creation of area joint bodies of users and the various providers of transport which would discuss matters of common interest and endeavour to settle them by agreement. The criticism no doubt would be made that co-operative action on these lines would mean a monopoly and would cause undue profits and lack of enterprise, but against this he held that profits should be subject to limits settled by Parliament and that there should be competition in service.

Amalgamation gone too far

He recalled that ten years ago he had given his Presidential Address to the Railway Students' Association of the London School of Economics and he had then expressed the opinion that the process of railway amalgamation under the Railways Act, 1921, had gone too far. He had dealt then at some length with the disadvantages in reduction of local contacts and the vigilance required to avoid the circumlocution and red tape which was a danger in all large organisations. He still thought the same after the passage of ten years, and that the bus industry was wise in organising its business in areas smaller than those settled for railway purposes. On the L.M.S.R. the war had delayed certain decentralisation ideas which would have devolved more responsibility to area managers, subject to central standards, and he hoped they would go forward when the conditions due to the war had passed.

Sir William Wood went on to deal with matters concerned with the technical efficiency of the industry and recalled some

of the great advances of recent years. He doubted if anyone who had seen the early days of the pneumatic tyre and the motorcar had foreseen the great technical advances which had produced the vehicles now accepted as a matter of course. No one would be rash enough to say that finality had been reached and the great strides in the design and methods of production due to the war in aircraft engines were bound to have their effect on the future design of all internal-combustion engines. There had been great strides also in the design of the internal parts of the steam locomotive, and the diesel-electric locomotive was now playing a distinct part in this country in shunting work. The greatest advance from the economy aspect of locomotive and rolling stock generally had been in the method of construction, in methods of repair, and in the rearrangement of engine sheds. The results on the L.M.S.R. illustrated this and showed an increase of 24 per cent. between 1923 and 1938 in the miles run per locomotive.

There had been similar strides in the shipping industry in design and methods of construction, in the economy of engine power, in passenger comfort, in refrigeration and ventilation, and with them dock and warehousing equipment had kept pace. In all forms of transport new developments in the use of electricity for lighting, as a means of motion, and in welding, had been great. The vast technical strides in the construction and operation of aircraft before the war had not had their recompense on the economic side but they had been of great value to the nation in 1940 and since. The future of air transport, at least for overseas purposes and difficult overland purposes, was assured.

Research and Cost Analysis

More than ever it was necessary in the development of the transport machine of the country to engage in organised, systematic, and carefully-recorded research to maintain and improve efficiency. He included not only scientific research in physical and chemical laboratories, but also cost analyses and the comparison of results in offices which "back-checked" the merits of the new compared with the old. The detailed analysis and compari-

son of each cost factor, including interest on capital and rent, in a number of places for such things as the construction of wagons, garaging of buses or locomotives, and so forth, were all illustrations of the comparisons which isolated the parts which cost most even where the detailed cost was least and pointed to better methods. The locomotive economies he had mentioned had not been achieved by rule-of-thumb methods but by heavy expenditure on statistical and cost records, coupled with technical research which had paid for itself many times over.

Capital and Labour

Turning to the net product of the industry and its division between those employed and those who had provided the capital, Sir William Wood said that their interests, if not one, were common. He knew of the theory of those who contended that there was something like immorality in any return to those who took the chance of gain or loss in investing their savings as capital to drive the machinery of production and distribution. He had not seen this simple theory applied in this country to those who provided the capital for the activities of the central or local governments, or who deposited their unspent savings in the Post Office and other savings banks, because, perhaps, that would have implied a total state which owned everything. He thought the theory of a total state would not be adopted here, but that owners would be entitled to earn a reasonable return on capital employed in the business, having regard to the risks inherent in it. Linked with it was the remuneration of labour which included not merely the rate of payment but the whole of conditions attached to the employment. Both sides had been to blame for many of the antagonisms which had existed. It was rare now to find workpeople destroying a new mechanical device because it destroyed the direct labour on a process, or an employer who took the whole of the gain of mechanisation after meeting its cost. Could it not be hoped that, in the difficult times when the peace had to be won, on both sides there would be the utmost desire to ensure the prosperity of the transport

industry and for both sides to discuss their affairs on the basis of disclosed facts alone.

Post-war Changes

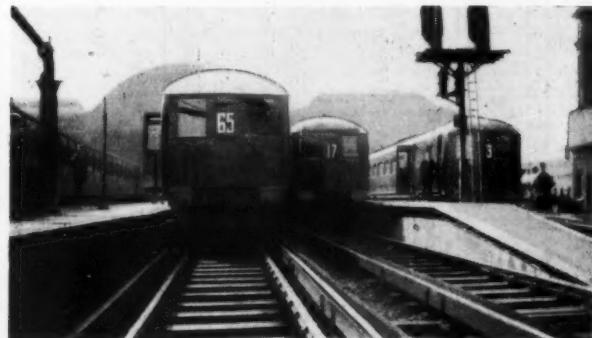
Dealing with the post-war change in the service the industry would have to perform, Sir William Wood explained that the mere advances in the technique of productive methods which the war had created were bound to cause many changes in the conditions and location of industry. He instance developments in plastics; the many things wrapped up in the word "radio-location"; in the constructional methods in engineering processes and in building; rubber substitutes and reclamation; pipelines; synthetic petrol; and even discoveries in coal conservation, and substitute metals, and woods caused by short supplies.

War needs had also quickened greatly recent developments in preserving food-stuffs and in reducing their bulk in desiccation or dehydration to save transport space in ocean steamers. The war had caused many changes in the bulking of general merchandise which had reversed the steady pre-war tendency towards ever diminishing smaller consignments; on the other hand, retail sales had been in smaller quantities and deliveries by vehicles from shops had been greatly reduced. In many cases no doubt these were temporary changes, but some would remain. How long would rationing of food and other commodities remain? How long would it take to effect the replacement of the machinery of transport in general, which had not only fallen behind but had been subject to greater wear and tear during the war? These were some of the questions they could all ask, but could not yet answer, as they were bound up in so many factors not yet known. They all affected the future needs of the country for transport and the services which they would have to perform. To aid in the solution of these problems and to aid in adapting the transport services of the country to the changes before them, was the chief function of the Institute of Transport, which was approaching its twenty-fifth birthday. It had reached maturity and it would, he was confident, achieve the result which its founders had foreseen.

From Steam to Electric Traction



Photo:



[H. M. Madgwick]

A comparative study in steam and electric of three well-known Southern Railway trains at London Bridge Station. They are (left) the 5.8 p.m. to Eastbourne, the 5 p.m. to Brighton, and the 5.4 p.m. to Worthing in 1932, and (right) their electric counterparts just before the war

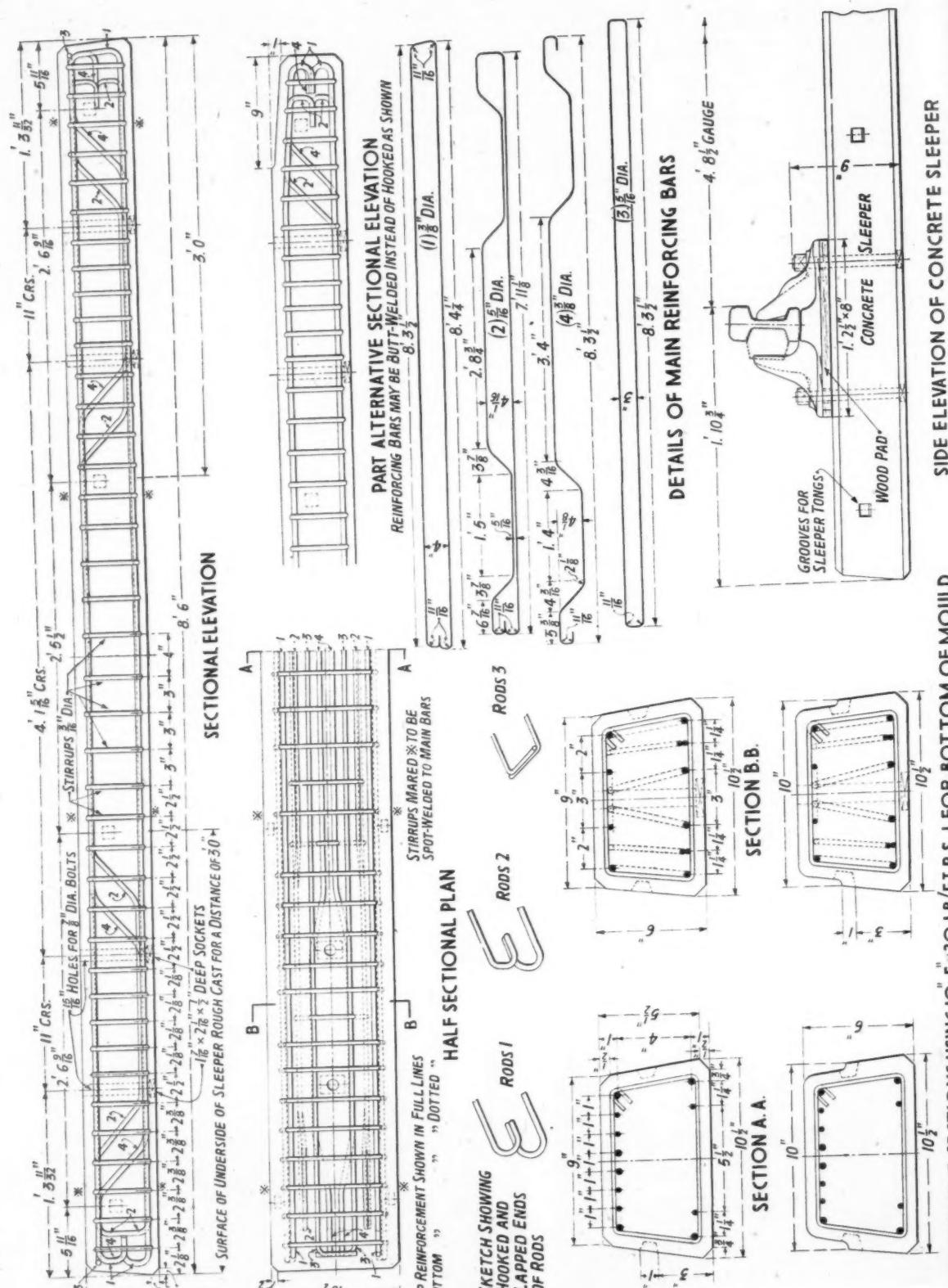


Fig. 1.—Details of the main-line concrete sleepers so far laid on the Southern Railway. (See article on opposite page)

Use of Concrete Sleepers and Steel Sleepers on the Southern Railway

Some details of experience and practice on the Southern Railway which were the subject of brief mention by Mr. George Ellson, Chief Engineer, Southern Railway, in his paper before the Railway Engineering Division of the Institution of Civil Engineers in January last

IN his paper dealing with the modern trend of railway engineering practice, read before the Railway Engineering Division of the Institution of Civil Engineers on January 19 (an abstract of which appeared in our issue of January 22), Mr. George Ellson, C.B.E., M.Inst.C.E., Chief Engineer, Southern Railway, suggested as one of several directions suitable for further progress that an alternative material to timber for railway sleepers might be found which would allow of general use without the limitations which at present applied to steel or concrete sleepers. In the following article is given a brief summary of the experience and practice on the Southern Railway with concrete and steel sleepers.

Under normal conditions the timber for the great bulk of the sleepers used on the railways in this country is imported, and in view of the obvious difficulties which exist during wartime much attention has been given to the employment of concrete sleepers, and many thousands of such sleepers are now in use.

Early experience with reinforced concrete sleepers proved unsatisfactory, and some which were laid in the old South Eastern & Chatham Railway main line in 1912 became shattered and had to be removed after approximately 5 years' life. In the year 1929, however, a number of trial sleepers cast at the Southern Railway's concrete depot with 1:1½:3 concrete (unvibrated) and reinforced with four $\frac{1}{2}$ -in. main bars, were laid in the main line between Exeter and Plymouth. These are still in good condition after 14 years' life (see illustration) and no attention has had to be paid to the spike and trenail fastenings which are still holding very firmly. The speed of trains over the track at this point, however, does not generally exceed 25 to 30 m.p.h.

With the outbreak of war the question of the possible employment of concrete sleepers became important, and various designs of sleepers and sleeper blocks were prepared and tried out. These were first used in sidings; the pairs of sleeper blocks were interspersed at varying intervals with through sleepers according to the class of traffic passing thereover, and no difficulties have arisen in connection with them.

The type of sleeper at present used for sidings is 7 ft. 6 in. long, 10 in. wide at the base and $5\frac{1}{2}$ in. deep, reinforced with eight $\frac{1}{2}$ -in. dia. main bars; sleeper blocks are 2 ft. long, 1 ft 3 in. wide and $5\frac{1}{2}$ in. deep, reinforced with a light framework of $\frac{1}{2}$ in. dia. rod. They are both cast with 1:1½:3 concrete, generally vibrated, and are holed for various types of serviceable chairs as required, with either spike and trenail fastenings or serviceable chair-screws in cement mortar. The weights of these sleepers and blocks (unchaired) are about 390 lb. and 130 lb. respectively. They are manufactured principally at the company's main concrete depot, and also at two subsidiary block-casting depots which have been established; the total output of blocks is over 10,000 a month. Siding-type sleepers have been purchased mainly from contractors.

Sidings on the straight or on easy curves are laid with one transverse sleeper alternat-

ing with two pairs of blocks, as is shown in one of the accompanying illustrations; on sharper curves sleepers and blocks are used alternately, or blocks omitted altogether. In some cases it is more expedient to use serviceable wood sleepers interspersed with pairs of concrete blocks, as for example, on unstable ground or when reconditioning existing sidings.

Where traffic is faster or of greater intensity, such as in reception roads and sidings which could be used as relief roads, the whole of the concrete sleepers used are of the through type.

As a precaution against "middle-binding," the ballast (generally ashes or stone dust in sidings) is at first left with a shallow "dish" in the 4-ft. way. As soon as the sleeper beds have consolidated, however, the "dish" is filled in, because if left it would constitute a potential danger to shunters in the blackout.

So far, some 25,000 sleepers and 78,000 blocks have been laid in sidings on the Southern Railway system, and a further 6,000 sleepers of the siding type and 30,000 blocks have been delivered. In view of the results obtained, the strength of the sleepers was developed so as to enable them to be used under fast and heavy traffic conditions, and trial sections of permanent way laid with them are now under careful observation.

The main-line sleepers so far laid in are 8 ft. 6 in. long, 10½ in. wide at the base, and 6 in. deep, holed for chair bolts; they are cast with 1:1½:3 vibrated concrete, and reinforced with six $\frac{1}{2}$ in. dia. and six $\frac{1}{4}$ in. dia. bars, and weigh about 540 lb. unchained. (Fig. 1).

For testing the sleepers, a special machine was devised, which is illustrated. It will be seen that it consists of a steel frame constructed of sectional material. The sleeper to be tested is slid underneath two short lengths of rails welded to the top horizontal member of the apparatus, and the load is applied by a 100-ton hydraulic jack fitted with a pressure gauge, and resting on the bottom horizontal member. Intervening short lengths of joists between which are laid transverse rollers enable any given pressure to be applied through the medium of shallow trays of granite chippings to various areas on the underside of the sleeper, corresponding to varying conditions which may be met with under traffic; for instance, the pressures applied to the sleepers may be so adjusted that the axle-load would be distributed either over the full length of the sleeper, or over short bearing lengths directly under the rail, or again the conditions under which a sleeper which is "middle-bound" could be reproduced. Results of tests on six sleepers are shown in Figs. 2 and 3.

One of the illustrations shows the sleeper being subjected to pressure directly under the rail bearings, and the deflection of the sleeper is recorded on the deflectometers which are shown in the photograph, one at the centre of the sleeper and two more directly under the short lengths of the rail on each side of the sleeper.

As a result of experience in the track, the design has since been modified; the

length has been reduced to 8 ft., and the reinforcement altered to four $\frac{1}{2}$ in. dia. (or $\frac{1}{2}$ in. square twisted) bars and four $\frac{1}{8}$ in. dia. bars; some of the sleepers of this type now in course of manufacture are holed for S.I.X chairs with two through bolts and others for S.I chairs with three spikes and trenails.

Up to the present over 5,000 concrete sleepers have been laid in running lines on the Southern Railway (representing about 2½ miles of track), and a further 13,000 have been delivered or are in course of production at the company's principal depot and by contractors. They are bedded on $\frac{1}{2}$ in.- $\frac{1}{2}$ in. chippings and boxed up with standard ballast.

A length of fast-running main line laid with concrete sleepers is shown in one of the illustrations herewith; another gives a closer view and also shows one of the modern-type joints now in use on the Southern Railway which eliminates pounding and noise at the joints.

The section illustrated has been track-circuited for trial purposes, and during the first seven months no failure occurred, but during an exceptionally heavy rainstorm on July 31 the resistance became reduced to such an extent as to render the track circuit inoperative. It should be pointed out, however, that the chair fastenings are of the through bolt type, and if fastenings of the screw type were used breaking down of the track circuits might be obviated.

This length of track, which extends continuously for about 2,000 yards, has been in service since January, 1943, and carries traffic with unrestricted axle loads, subject only to the usual wartime restrictions as to maximum speed.

Some very minor defects have appeared in a few of these sleepers and these are being watched carefully, but they are standing up to the work very satisfactorily.

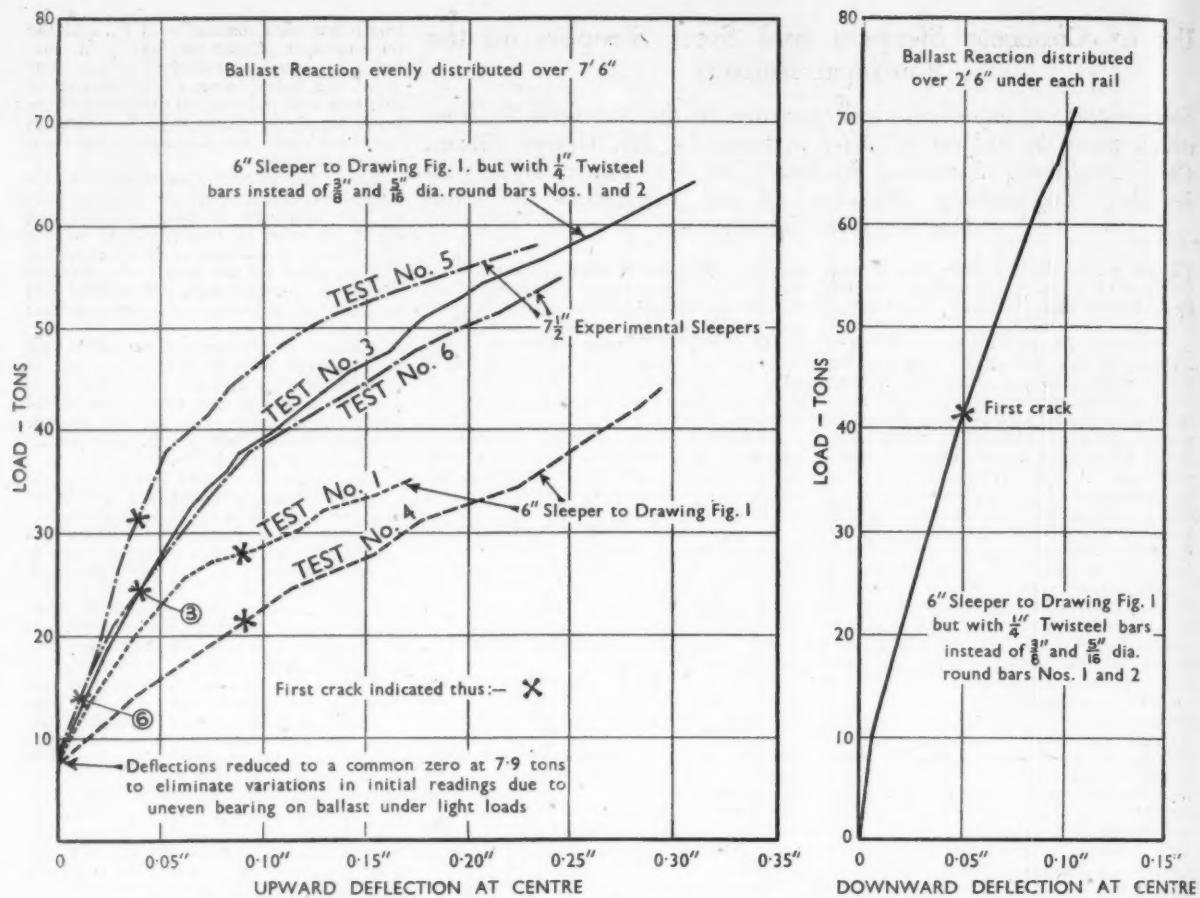
Concrete sleepers in which the reinforcement is pre-stressed have been evolved but are not at present on the market in large quantities. The pre-stressing of the steel results in considerable diminution of the amount of reinforcement required, and as they become available the development in the use of such a type will be watched with considerable interest. Unfortunately, only a few are under trial on different railways at present.

Steel Sleepers

At the present time, of course, it is quite impossible to obtain steel sleepers, but under post-war conditions it is more than likely that interest will again be centred on them. They were first introduced nearly 60 years ago and have been used extensively in tropical countries where conditions inimical to the employment of timber exist, as, for instance, their destruction by white ants. Even where such trouble is not prevalent the long life of a steel sleeper compared with wood is an important consideration, particularly in countries where timber has to be imported, and many designs have been evolved with a view to ensuring sufficient stiffness without excessive weight, and incorporating a suitable method of holding the rail in place.

The first steel sleepers to be used in Southern Railway tracks were laid by the L.S.W.R. in 1921. They were of the Sandberg type, consisting of an inverted pressed-steel trough 8 ft. long, 11 in. wide at the base and 2 in. deep (excluding the rib on the top surface). Lugs are pressed up out of the surface to form chairs, and the openings so made are bridged by rolled steel-bearing plates on which the rails are seated.

The original sleepers weighed 156 lb. complete with two bearing plates; the



Figs. 2 and 3—Results of tests on six sleepers made by means of the testing machine illustrated on page 385

depth was subsequently increased to $2\frac{1}{2}$ in., raising the weight to 168 lb., and in the latest design the thickness of the trough was increased from $\frac{1}{8}$ in. to $\frac{3}{8}$ in. and the weight was increased to 191 lb. (See illustration).

A more recent type (adopted by the Southern Railway in 1931) is the United Steel Companies Type 2A. This is also shown and consists of a pressed steel trough 8 ft. 6 in. long overall, $11\frac{1}{2}$ in. wide and $2\frac{1}{2}$ in. deep, having a thickness of $\frac{3}{8}$ in. In this case pressed-steel chairs are welded to the sleeper, which is specially indented to receive them. The weight of this sleeper is 196 lb. Altogether about 128,000 Sandberg and 71,000 United Steel Companies Type 2A steel sleepers have been laid, representing a total of about 94 miles of track.

Although wood keys were originally tried with the earlier sleepers they were not entirely effective in preventing rail creep, and steel keys were, therefore, adopted, with satisfactory results.

The steel sleepers are generally bedded on 1 in. or $\frac{1}{4}$ in. stone chippings and packed by shovels or tamping machines. Once the ballast has consolidated no difficulty is normally experienced in keeping the track well aligned.

Although they are not suitable for electrified lines or where track circuits exist, they are giving good service elsewhere. They have not been in use long enough to enable an opinion to be formed as to their expected total life, but as an example, steel sleepers which had been in

the main line for 14 years and which then had to be removed because of electrification proposals, were found to be in excellent condition and were, therefore, relaid elsewhere and are still in good order after a further 6 years.

Moreover, certain lengths of track would already have been due for spot resleeping had wood sleepers been used, and the benefit of using steel sleepers is thus being reaped at a time when the timber shortage is acute.

In order to ascertain the rate of corrosion of these sleepers a comprehensive series of weighings is in hand. The following table gives a summary of the average loss of weight as obtained from a number of such weighings to date:

Year laid in	Type	Number laid in	Average loss of weight to date (lb.)
1921-23 Sandberg 156 lb.*	...	2,030	No weighings
1929 ..	168 lb.**	35,482	84
1930 ..	..	30,117	84
1931 ..	191 lb.**	23,596	84
1932 ..	United Steel Type 2A	578	8
1932 Sandberg 191 lb.*	...	36,369	64
1932 Dorman Long ..	...	650	No weighings
1935 United Steel Type 2A	...	10,496	3
1936 ..	..	26,666	3
1937 ..	..	16,710	34
1938 ..	..	16,769	34
Total ..	..	199,463	

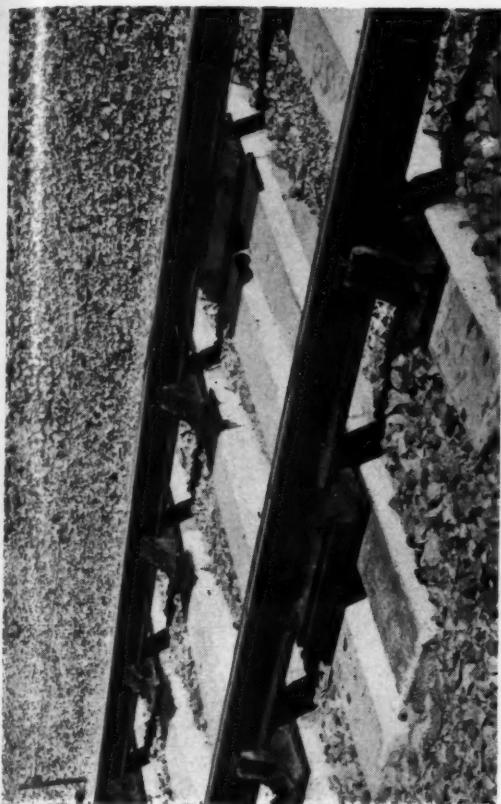
* Weight including two bearing plates

Of the above, 7,840 have been removed from running lines; 60 per cent. due to electrification, track circuiting, or altera-

tions to layouts, and 40 per cent. to deterioration or defects. Of these 4,029 have been re-used in sidings, and of the remainder 3,156 are available for re-use.

PAPER-BASED PLASTICS.—The non-shrinking and non-warping qualities of paper-based plastic make it an ideal substance from which to manufacture containers for equipment which has to stand up to variations of temperature. Among articles in which it is used are containers for anti-malaria equipment and first-aid outfits for the Services; transit boxes for the Oxford Vaporiser, which is being used in many parts of the world, and must stand up to variations of climate; and boxes for the Army's pack-radio batteries. Gap-measuring equipment used by the Army for measuring distances to be bridged, also is encased in a paper-based plastic container. Land-mine detectors are made mainly of this material. Every application of paper-based materials places an increasing strain on our stocks at a time when collections of waste paper for the country as a whole are some 2,000 tons a week below requirements. Economy in the use of paper also is essential.

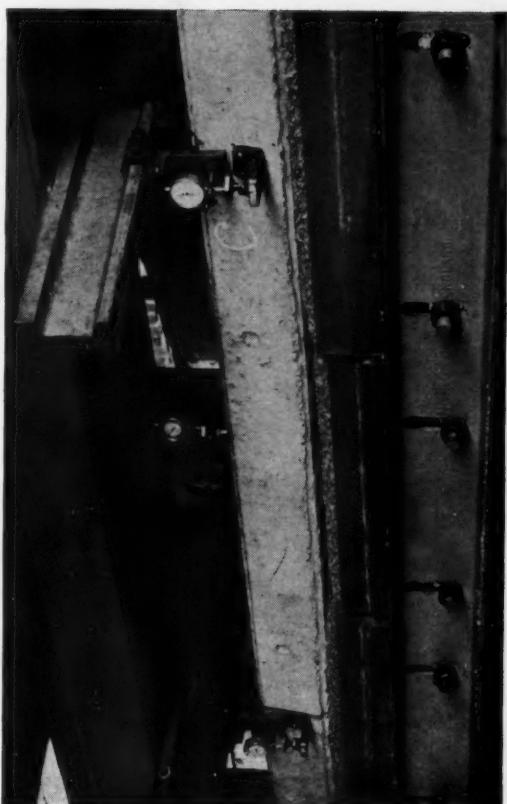
TRANSPORT STRIKES IN COLOMBIA.—A number of strikes has taken place on the part of employees of public-transport services in Colombia. A Presidential Decree states that these particularly affect Caldas, in which province a state of siege has been declared.



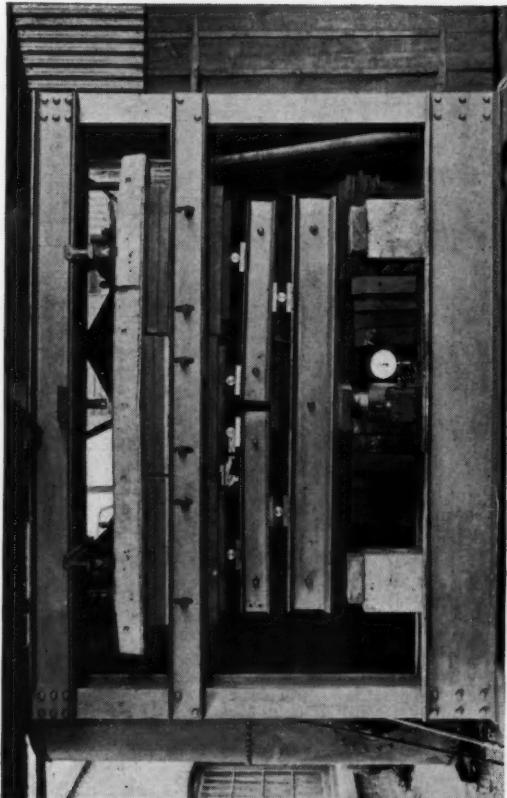
Modern type Southern Railway joint designed to eliminate pounding and noise at joints



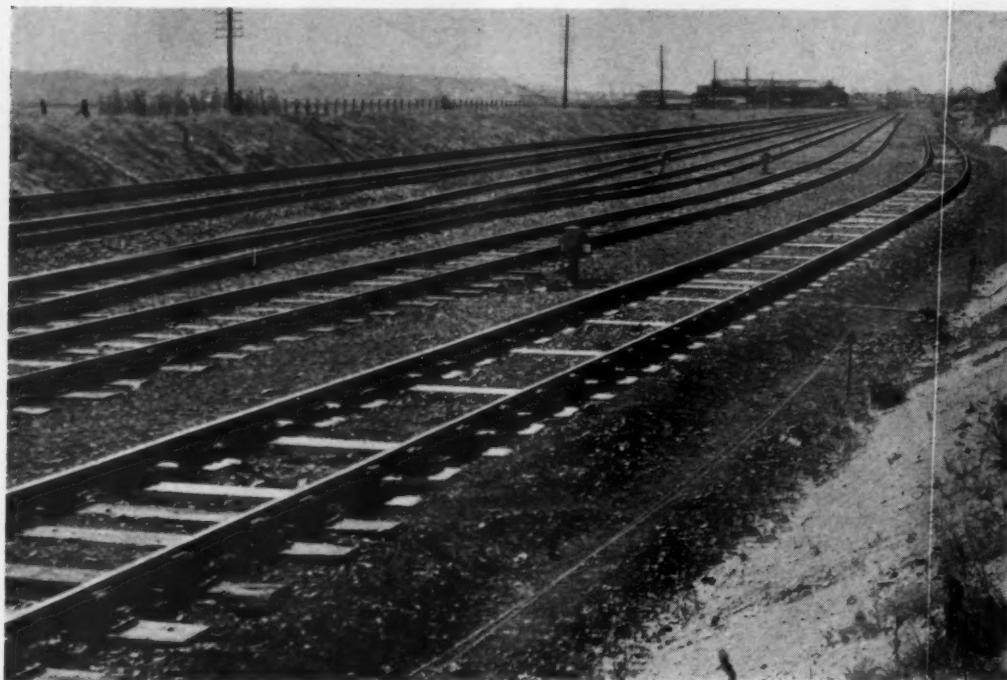
Concrete sleepers on the main line between Exeter and Plymouth after being in use 14 years



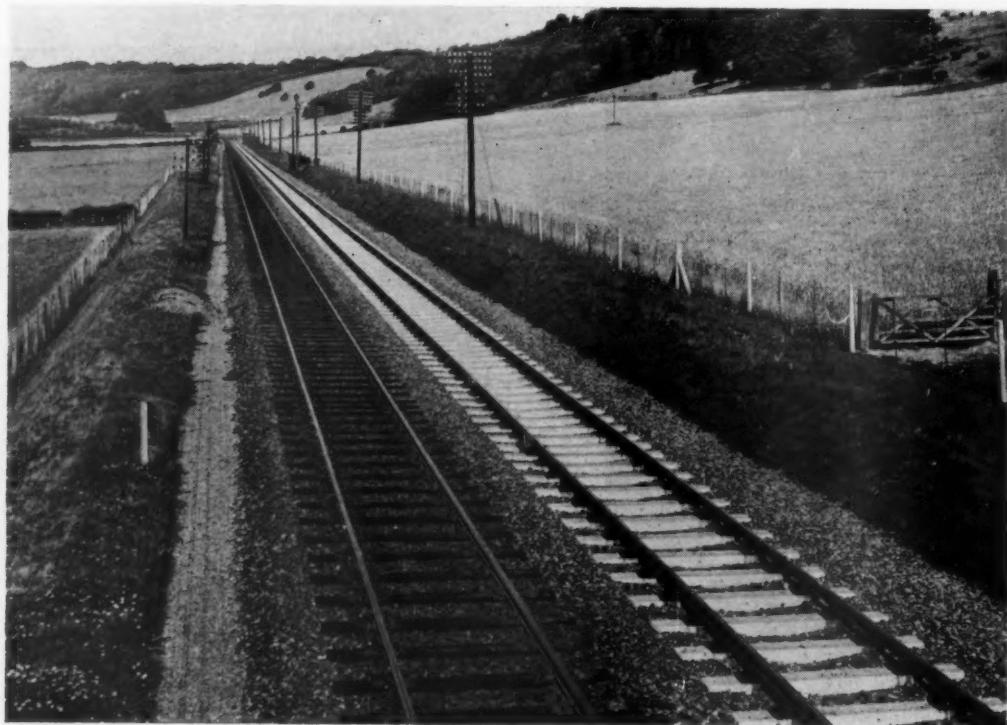
Concrete sleeper in testing machine



General view of machine for testing concrete sleepers



Sidings laid with one transverse concrete sleeper alternating with two pairs of blocks



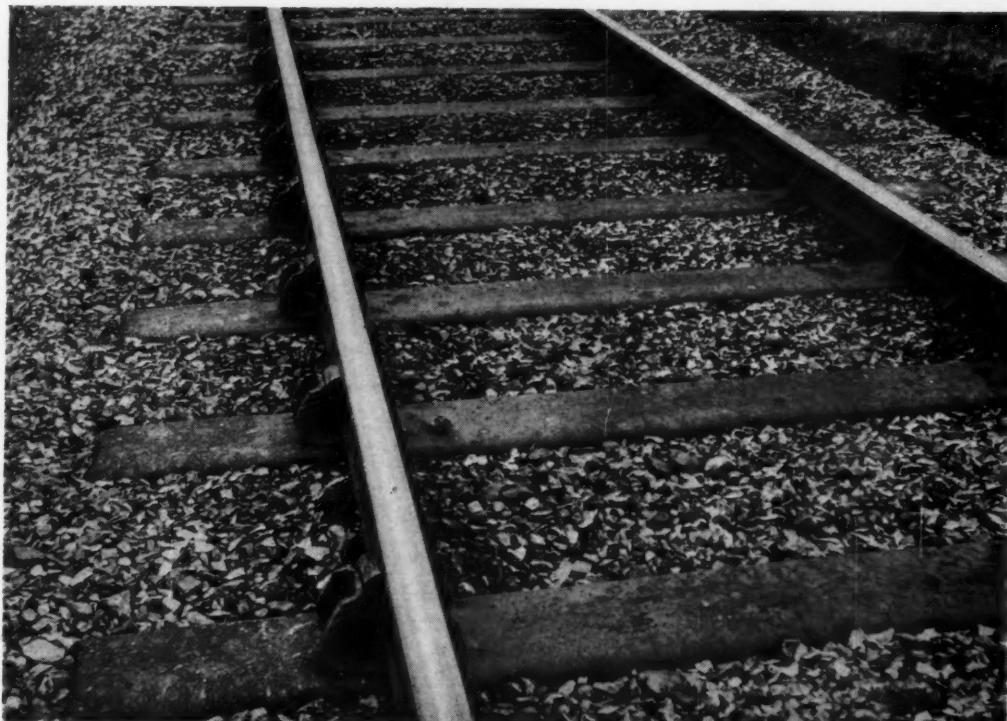
Length of fast running main line laid with concrete sleepers

USE OF CONCRETE SLEEPERS AND STEEL SLEEPERS

ON T



Original steel sleepers in use on the Southern Railway



More recent type of steel sleepers with pressed-steel chairs welded to sleeper

ERS
ON THE SOUTHERN RAILWAY (See article on page 383)

Electric Railway Traction—III*

Substation switchgear and methods of supplying current to trains

By C. E. Fairburn, M.A., Acting Chief Mechanical Engineer & Electrical Engineer, L.M.S.R.



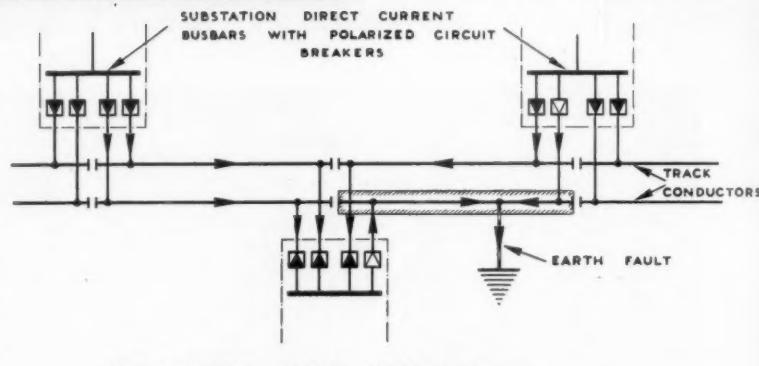
IN the last few years much development has been made in the high-tension switchgear used for connecting or disconnecting the high voltage lines coming into the distributing stations and into the substations. Although the switching contacts are at present generally opened and closed in oil, which quenches the arc formed when the switch opens under load, the tendency appears to be towards types which use a minimum of oil or in which an air blast is used for extinguishing the arc. In the minimum-oil type of breaker, when the contacts open, a jet of cold oil is forced in the gap between the contacts to quench the arc. With the air-blast type of breaker the arc between the contacts is actually blown out by air under a pressure of about 60 lb. per sq. in.

Most of the breakers on traction lines in this country are still of the type where the contacts are in a large tank of oil and they have worked successfully for a number of years. Although the risk of fire or explosion in traction substations is not very great with these breakers, naturally, if the oil can be eliminated altogether, or reduced in quantity, this risk is minimised. Further, the newer types of breaker take up less room, as shown by the accompanying illustrations of older and more recent standard outdoor types of gear used by the Southern Railway. On the direct-current side some form of automatic circuit-breaker has to be provided so that trouble outside the substation shall not subject the converting plant to excessive loads. In the early days this circuit breaker was of a type which would now be considered as slow speed; the circuit was interrupted in about 1/10th of a second, but this period, although short, was sometimes sufficient for serious damage to be done to the rotary converters. Later, however, a high-speed type was developed; this can interrupt a circuit in about 1/100th of a second. With this speed of interruption

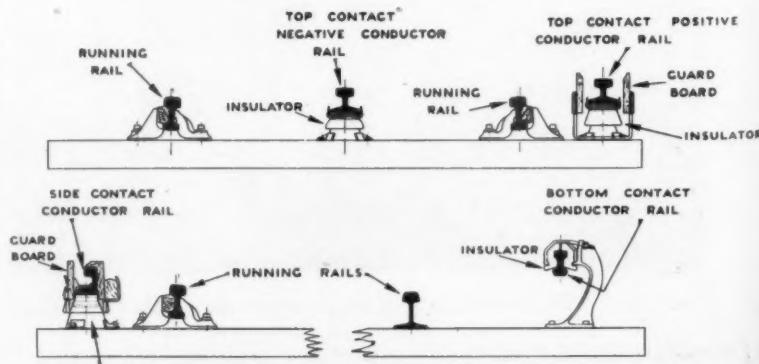
even a severe fault on the track is cut off so quickly that no damage occurs to plant in the substations.

In the days of the manually-operated substation, that is, before the method of controlling substations from outside was developed, the practice was to put several machines in one substation so that they could be controlled by one group of attendants. However, since the remotely-controlled mercury-arc rectifier came into use, there has been no need to put many units in one substation; consequently, a new arrangement using single-unit substations has been developed. In other words, instead of using large substations containing some two, three, or four units, it is now possible to have a greater number of substations, each with one converter unit only, all remotely controlled from a central point. This has the advantage that the voltage drop on the track conductor system is reduced; all units are constantly in use, and no standby sets in the ordinarily accepted sense are necessary. It marks a definite step forward in traction practice.

In all substations the energy transformed by the rotary converters or rectifiers is taken to a set of copper bars called busbars, and from these busbars there is a number of outgoing connections called feeders, depending on the arrangement of the track to be supplied. Today it is standard practice to put a high-speed breaker in each feeder circuit. These breakers are set to a lower interruption



Section isolating arrangements



Different arrangements of conductor rails

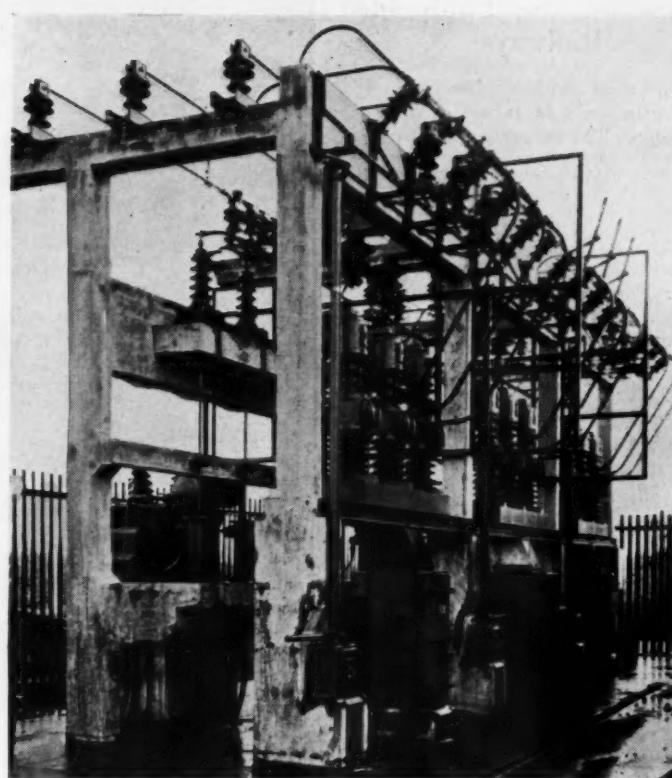
* Abstracts from a Faraday Lecture. Part I was published in our issue of August 20, and Part II in our issue of September 17.

value than the converter breakers and so, if there is trouble on any particular part of line, the circuit breaker on the feeder for that part will open, leaving the converter still connected to the busbars and, as the other feeder breakers will remain closed, power is cut off only from the section which is in trouble. This arrangement is shown in the accompanying diagram which shows also a track sectioning cabin by means of which the length of line affected by a fault is still further reduced.

The three commonly used track conductor systems may be classified as (a) third rail, (b) third and fourth rail, (c) overhead. The third rail system consists simply of a rail very similar to the running rail, but flat bottom for easy erection, mounted on insulators usually alongside but sometimes between the running rails; from this the current is picked up by shoes mounted on the trains. Every electric circuit has to be, as it is named, a circuit, that is, the current must have an outgoing path from the substation and also a return path. With the third rail system, the return is obtained by using the running rails. The fishplated joints in these rails have a high electrical resistance, and to overcome this the rails are bonded with copper links. For the same reason, the joints of the third rail have to be bonded. With the third- and fourth-rail system, yet another rail is installed along the track, usually between the running rails, and is used for the return current. This is mounted on insulators and bonded in exactly the same way as the third rail.

With the overhead system a copper conductor known as the trolley wire is suspended over the track from a supporting wire held by insulators mounted on steel structures, and the return circuit is made through the running rails in exactly the same way as with the third rail system.

Various forms of third rail are in use; there is the over-running type, the under-running type, and the side-contact type. A diagram shows these various arrangements. The over-running type is common in this country and can be seen in various places, including the Tyneside lines, those



Standard substation of modern type on the Southern Railway. The illustration at the beginning of this article is of a type standard some years ago

around Liverpool, the Euston-Watford line, the Southern lines, and on the Underground. The under-running type is used in some countries and has the great advantage of being relatively immune from snow and frost troubles, but it is expensive

to instal. The side contact type is used on the Manchester-Bury line with a 1,200 volt supply and it, too, is free from troubles due to snow and ice, but again it is expensive.

(To be continued)

High-Speed Traction Motors

UP to the present time the d.c. traction motor used on railways generally has been of the axle-hung type, very similar to that in common use on trams. The development of the trolleybus and the petrol-electric road vehicle led to the introduction of faster-running and more compact traction motors. The new high-speed type of motor is finding application in light diesel-electric railcars but generally its characteristics and potentialities are little known to railway engineers, so that the question of its wider application in the railway field cannot have received much attention as yet. For an instructive comparison between the older and the newer types of traction motor reference may be made to a paper by Mr. C. A. Atwell of the Westinghouse Electric & Manufacturing Company entitled "High-Speed Traction Motors." This was published in the July 1943 transactions of the American Institution of Electrical Engineers. Brief reference is made here to outstanding points in this paper.

Hitherto armature speed has been limited by the type of gearing used; these

single reduction gearing used with axle-hung motors cannot be made for ratios over 6 to 1 and the usual figure is 5 to 1. By departing from the axle-hung arrangement it is possible to employ a higher ratio up to any figure desired. The size and weight of an armature are approximately proportional to the torque and this, for a given horsepower, can be reduced if the speed be increased so that armatures can be correspondingly smaller. The field structure can be reduced in proportion, with the result that the high-speed traction motor weighs less than one half of the equivalent machine of standard type. The higher speed gives improved ventilation so that the continuous rating may be from 80 to 90 per cent. of the one-hour rating instead of only 60 to 75 per cent. The saving in copper used for windings is important for its own sake but it gives the further advantage of diminished resistance losses in windings. The high-speed motor shows a higher efficiency under heavy load conditions, though at the highest speeds iron and friction losses become predominant; these

are rather more in the high-speed motor than in one of normal design. High speed improves commutation because it enables a reduced number of armature conductors to be used.

SWEDISH ELECTRIFICATION PROPOSALS.—In connection with the policy of railway electrification in Sweden, the State Railways administration has issued a report to the Government in which conversion is proposed of the following 4 ft. 8½ in. gauge lines from steam to electric traction:

	Miles (approx.)
SOUTHERN SWEDEN	
Borås-Alvesta-Emmaboda	...
Emmaboda-Karlskrona	...
Emmaboda-Kalmar	...
NORTHERN SWEDEN	
Boden-Karungi-Haparanda	...
CENTRAL SWEDEN	
Söderhamn-Kilafora	...

The Railway Board has ordered an investigation into the suitability of electrifying the lines Gävle-Härnösand (about 170 miles); Härnösand-Langsele (about 70 miles); and Ljusdal-Hudiksvall (about 35 miles). The lines are of 4 ft. 8½ in. gauge.

Scenes on the Philippine Railways

(A sketch map and brief description of these railways was included in our August 27 issue, pages 215-6)

Right: Front view of new station at Legaspi, Albay, with Mt. Mayon in background. This station is the terminus of the main line to the south



Rear view of old dilapidated station building at Paniqui, with adjoining canteen



New type of flagstop shelter at Masili, between Pansol and Los Banos, on the main south line



Enlarged station at Banka Banka, Pagsanjan branch, showing typical small branch-line station



New station at Paniqui, on the main line to the north, showing long platform and shelter



Railcar in new station at San Jose, Nueva Ecija, the terminus of the new Tarlac-San Jose branch line



Re-modelled station at San Fernando, Pampanga, an important junction to the north of Manila



New incoming freight shed at Manila, showing second floor yardmaster's office at north end

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RAILWAY NEWS SECTION

PERSONAL

We regret to record the death on October 11, at the age of 75, of Sir Guy Granet, G.B.E., a Director (formerly Chairman) of the London Midland & Scottish Railway Company, and a Director of many other companies, and formerly General Manager of the Midland Railway (see editorial note, page 373).

Mr. John Storer Nicholl, C.B.E., Director & Chief Executive Officer of McNamara & Co. Ltd., who is relinquishing the Presi-

was appointed Chief Executive Officer of the company. He has been a member of the Transport Advisory Council since its inception in 1934. He served on the small expert committee appointed by the Minister of Labour to consider and give advice on the setting-up of wagon machinery under the Road & Rail Traffic Act, 1933, and later became a member of the National Joint Conciliation Board for the Road Motor Transport Industry. In 1938, he was a member of the McLintock Committee appointed to inquire into public transport in Northern Ireland. Mr. Nicholl has

Sir William Valentine Wood, President of the Executive, London Midland & Scottish Railway, who, as recorded in our May 28 issue, is President of the Institute of Transport for the session 1943-44, was born on February 14, 1883. He was educated at the Methodist College, Belfast, and entered the Accountant's Department of the former Belfast & Northern Counties Railway in 1898. This undertaking was acquired by the Midland Railway of England in 1903, and he continued to serve in the Accountant's Department of the Northern Counties Committee of that railway. When the



Mr. J. S. Nicholl

Chief Executive Officer, McNamara & Co. Ltd.,
President, Institute of Transport, 1941-43



Sir William Wood

President of the Executive, L.M.S.R.,
President, Institute of Transport, 1943-44

dency of the Institute of Transport, which he has held since 1941, was educated at Sutton Valence and became associated with the transport industry in 1904, when he joined the office staff of the Union-Castle Line. Subsequently, in western Canada, he served for a short period as Office Manager to the Chief Engineer of the Hudson Bay & Pacific Railway, and afterwards qualified as a chartered accountant and practised in Saskatchewan and Alberta. During the war of 1914-19, he served on the staff of the Auditor & Controller of the Imperial Munitions Board, Ottawa, and eventually was appointed Deputy Auditor & Controller. In 1920 he joined Sir Maxwell Hicks, then acting as Receiver & Manager of McNamara & Co. Ltd., and served as Chief Accountant until shortly after the reconstruction of the company in 1921, when he joined the firm of Maxwell Hicks & Company, chartered accountants, which firm manages McNamara & Co. Ltd., and

played an important part in the wartime organisation of the road haulage-industry, having served as a member of the Road Transport (Defence) Advisory Committee, and subsequently on the Standing Joint Committee of Road Hauliers' National Organisations, the Road Haulage Consultative Committee, the Road Haulage (Rates) Consultative Committee, and the Road Haulage (Operations) Advisory Committee. He is a member of the Committee on Emergency Conversion of Motor Vehicles to Producer Gas and the Committee on Alternative Fuels for Internal Combustion Engines. Mr. Nicholl is the author of a number of papers on matters of road-transport interest, and was awarded the Institute of Transport (Road Transport) Gold Medal for the 1934-35 session. He served as a Member of Council of the Institute of Transport, 1934-37, a Vice-President, 1937-40, and a member of the Executive Committee from 1939.

Government took control of the Irish railways in 1917 he was appointed Secretary, and later a Member, of the Railway Accountants Committee set up by the Irish Railway Executive Committee. On the formation of the Ministry of Transport in 1919, he was transferred to London as Director of Transport (Accounting) and in 1921 became Accountant to the Ministry. In 1924 he returned to railway service as Assistant to the Accountant-General of the L.M.S.R., and was appointed Controller of Costs & Statistics in 1927, which position he vacated in 1930, to become Vice-President, Finance & Service Department. As Senior Vice-President of the Executive of the L.M.S.R., he was created a Knight Bachelor in the Coronation Honours List in May, 1937. Sir William Wood became President of the Executive, L.M.S.R., in 1941. On numerous occasions he has given evidence on behalf of all the main-line railway companies before Parliamentary com-

mittees, the Railway Rates Tribunal, and the National Wages Tribunal. He is an authority on railway finance, and, in collaboration with the late Lord Stamp, was responsible for the preparation of the small volume, "Railways," in the Home University Library. From 1926 to 1936 he was a member of the Railway Statistics Committee, of which he was Chairman from 1930 onwards. He served as Chairman of the General Managers' Conference, Railway Clearing House, for 1933, and again for 1937. In 1930 he was elected Honorary Librarian of the Institute of Transport, and he became a Vice-President four years later; he was a Member of Council for the years 1929-30 and 1932-33. In 1937 he was appointed to the Executive Committee of the Decimal Association. On September 1, 1939, the Minister of Transport made an Order taking control of all the principal railway-undertakings in Great Britain, and appointed the Railway Executive Committee to be his agent for the purpose of giving directions under the Order. Sir William Wood was one of the original members of that committee, and has taken a prominent part in its deliberations.

Mr. R. P. Beddow has been appointed a Director of Ribble Motor Services Limited and of Blackpool Omnibus Stations Limited, in the place of Mr. Sidney Garcke, who has resigned. Both undertakings are members of the British Electric Traction group of bus companies.

Mr. Joseph Percival Meadows has retired from the position of Stores Superintendent, Great Southern Railways (Eire). He was educated at St. Mary's College, Dundalk, and entered the service of the former Great Southern & Western Railway as a junior clerk in the General Stores Department at Inchicore in 1901. After fifteen years in the Accounts Section he was transferred to the General Section, and later was appointed Chief Clerk, which position he retained on the amalgamation. He was appointed Assistant to Mr. F. G. Prideaux, then Stores Superintendent, in 1930, and a year later succeeded him in that position. Mr. Meadows is a member of the Government Coal Committee, the Fuel Advisory Committee, and a Director of Fuel Importers (Eire) Limited.



Photo] [Lafayette
Mr. J. P. Meadows
Stores Superintendent, G.S.R. (Eire),
1931-43



Mr. M. H. B. Gilmour

Appointed Assistant Solicitor,
G.W.R.

Mr. Michael Hugh Barrie Gilmour, Parliamentary, Rating & General Assistant to the Solicitor, G.W.R., who, as recorded in our October 8 issue, has been appointed Assistant Solicitor, was born in 1904 and was educated at Leighton Park and abroad. From 1923 to 1929 he was articled to Mr. A. S. Chetwood, of Minet, Pering, Smith & Company, solicitors. In February of the latter year he was admitted a solicitor, and in December joined the staff of the Solicitor, G.W.R., in the Parliamentary & General Department. Between 1931 and 1935 he represented the company on all parts of the system in numerous objections to applications for licences under the Road Traffic Act, 1930, and the Road & Rail Traffic Act, 1933. He assisted in the company's successful opposition to the Severn Bridge Bill in 1936, and was engaged in general and Parliamentary work from that year until 1940. When, in July, he joined the R.A.F.V.R. He served in the Ministry of Aircraft Production and undertook special investigations for Lord Beaverbrook, but was released from the R.A.F.V.R., with the rank of Squadron Leader, at the request of the Minister of War Transport, in September, 1941. In that month he was appointed to the position with the G.W.R. from which he is now promoted, and at the same time became a Parliamentary agent.

INSTITUTE OF TRANSPORT

Mr. M. M. Allen, A.M.Inst.T., has relinquished the office of Honorary Secretary of the New South Wales Centre of the Institute of Transport. He was associated closely with the formation of the Centre, and was appointed its first Honorary Secretary in 1934. Mr. F. J. Wright, New South Wales Government Railways, has been appointed Acting Honorary Secretary.

We regret to record the death on October 10, at the age of 72, of Sir Robert Hilton, O.B.E., Deputy-Chairman of United Steel Cos. Ltd., and formerly Deputy-Chairman & Managing Director of Metropolitan-Vickers Electrical Co. Ltd.

We regret to record the death on October 3, at the age of 72, of Mr. A. D. Delap, M.A.I., M.Inst.C.E., Past-President of the Institution of Civil Engineers of Ireland, who was Engineer in charge of the con-

struction of Rosslare Harbour for the Fishguard & Rosslare Railways & Harbours Company.

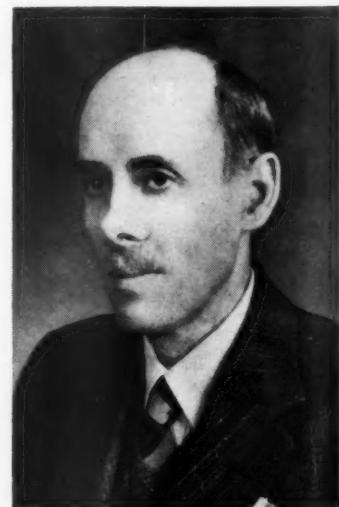
Lord Leathers, Minister of War Transport, has appointed Mr. L. H. Macklin to be his private secretary, in place of Mr. F. H. Keenlyside, promoted.

We regret to record the death on September 28, at the age of 85, of Mr. Malcolm Macpherson, M.Inst.C.E., late Chief Assistant Engineer of the former Glasgow & South Western Railway Company.

Mr. J. Benstead, General Secretary of the National Union of Railwaymen, has been appointed a member of the Advisory Council to the Committee of the Privy Council for Scientific & Industrial Research. Sir John Greenly, who is Chairman of Babcock & Wilcox Limited, retired from the council on completion of his term of office on September 30.

Mr. Stanley Christopherson, Chairman of the Midland Bank Limited, has been elected a Director of the Clydesdale Bank Limited, to fill the vacancy created by the death of Mr. Reginald McKenna.

Mr. Arnold Clear, A.M.I.Mech.E., Locomotive Depot Superintendent, Mexborough, L.N.E.R., who, as recorded in our September 17 issue, has been appointed District Locomotive Superintendent, Norwich, was educated at St. Albans School and the Manchester School of Technology, and became an apprentice at Gorton Works in 1911. On August 4, 1914, he was mobilised with the 8th Battalion, Manchester Regiment, and later served in Gallipoli and Egypt. In 1917 he was seconded to the Royal Flying Corps as a pilot; he was demobilised in 1919, and retired with the rank of Major in 1922. He served as Assistant Foreman, and later as Running Shed Foreman, at Birmingham in 1919; three years later he became Assistant District Locomotive Superintendent for the Lincolnshire District. Mr. Clear was made Depot Superintendent at March in 1934; his appointment to a similar position at Mexborough dates from 1938.



Mr. Arnold Clear

Appointed District Locomotive Superintendent, Norwich, L.N.E.R.

Mr. W. Averell Harriman, the new U.S. Ambassador to Moscow, was Chairman of the board of directors of the Union Pacific Railroad from 1933 to 1942. He had also been since July, 1932, Chairman of the Executive Committee of the Illinois Central Railroad.

We regret to record the death on October 4, at the age of 84, of Mr. J. H. Gallimore, who retired from the post of District Goods Manager, Worcester, G.W.R., in October, 1924, after nearly 51 years' service with the company.

L.M.S.R. APPOINTMENTS

The L.M.S.R. announces the following appointments:—

Mr. L. C. Brittlebank, District Goods Manager, Wolverhampton, to be District Goods Manager, Birmingham, *vice* Mr. S. Roberts, retired.

Mr. S. Williams, New Works Assistant, Signal & Telegraph Engineer's Department, Watford, H.Q., to be Indoor Assistant (Signals), Signal & Telegraph Engineer's Department, Watford, H.Q., *vice* Mr. V. H. Openshaw, deceased.

Mr. R. White, District Locomotive Superintendent, Saltley, to be District Locomotive Superintendent, Motherwell, *vice* Mr. H. G. Prentice, retiring.

Mr. S. T. Clayton, District Locomotive Superintendent, Rugby, to be District Locomotive Superintendent, Polmadie, *vice* Mr. D. Dobbie, retiring.

Mr. R. J. Spencer, Assistant, Office of Divisional Superintendent of Operation (Motive Power) Crewe, to be District Locomotive Superintendent, Saltley, *vice* Mr. R. White, promoted.

Mr. I. E. Mercer, District Locomotive Superintendent, Toton, to be District Locomotive Superintendent, Rugby, *vice* Mr. S. T. Clayton, promoted.

Mr. G. F. Horne, District Locomotive Superintendent, Bank Hall, to be District Locomotive Superintendent, Toton.

Mr. J. Davenport, Assistant District Locomotive Superintendent, Willesden, to be District Locomotive Superintendent, Bank Hall.

Mr. G. L. Enright, Joint Goods Agent, Wakefield (L.M.S.R./L.N.E.R.), to be Goods Agent, Leeds (Hunslet Lane), *vice* Mr. N. R. Smith, retired.

Mr. B. Audsley, Joint Goods Agent, Batley (L.M.S.R./L.N.E.R.), to be Joint Goods Agent, Wakefield (L.M.S.R./L.N.E.R.).

Mr. P. Watkinson, Chief Clerk, Bradford (Valley), to be Joint Goods Agent, Batley (L.M.S.R./L.N.E.R.).

Mr. J. G. Malley, Goods Agent, Bridgeton, to be Goods Agent, Motherwell, *vice* Mr. J. A. Pearson, retiring.

Mr. G. McBride, Goods Agent, Partick, to be Goods Agent, Bridgeton.

Mr. J. Hollingworth, Chief Clerk, Liverpool Road, Manchester, to be Goods Agent, Gloucester, *vice* Mr. H. J. Stanway, promoted.

Mr. J. A. Ford, Goods Agent, Tunstall, to be Joint Goods Agent, Macclesfield (L.M.S.R./L.N.E.R.), *vice* Mr. H. F. Cox, promoted.

Mr. C. H. Burgess, Running Shed Foreman, Patricroft, to be Assistant District Locomotive Superintendent, Crewe, *vice* Mr. G. W. Miller, promoted.

Mr. H. A. Peet, Assistant District Locomotive Superintendent, Devons Road, to be Assistant District Locomotive Superintendent, Willesden, *vice* Mr. J. Davenport, promoted.

Mr. W. Killan, Running Shed Foreman, Staveley, to be Assistant District Locomotive Superintendent, Devons Road.

L.N.E.R. APPOINTMENTS

The L.N.E.R. announces the following appointments:—

Mr. H. E. Stratton, Assistant to the Engineer (London) (Bridges), has been appointed Assistant to the Chief Engineer (Steelwork).

Mr. A. R. Dunbar, Acting District Superintendent, Manchester, has been appointed Acting Assistant Superintendent, Eastern Section, Southern Area, in succession to Mr. J. E. Sharpe, who has retired.

Mr. R. B. Temple, Acting District Goods Manager, Leeds, has been appointed District Goods & Passenger Manager, Lincoln, in succession to Mr. F. Leigh, who has retired.

Mr. F. Probert, Assistant District Superintendent, Lincoln, has been appointed District Superintendent, Lincoln, in succession to Mr. E. J. Stephens, who recently was appointed District Superintendent, Doncaster.

Major-General the Rt. Hon. Sir Frederick Sykes, M.P., who is a Director of the Associated Equipment Co. Ltd., and of Callender's Cable & Construction Co. Ltd., has joined the board of the Hongkong & Shanghai Banking Corporation.

We regret to record the death of Mr. William A. Faux, who was formerly a Director of Gresham & Craven Limited.

COLONIAL RAILWAY APPOINTMENTS

The Crown Agents for the Colonies have made the following first class appointments:—

Mr. N. Treheweler to be Assistant District Engineer, Railway Department, Palestine.

Mr. E. Mabbs to be Assistant District Running Superintendent, Nigerian Railway.

Mr. E. Johnson to be Assistant Traffic Superintendent, Palestine Railways.

We regret to record the death on October 5, in his 92nd year, of Sir James Fortescue-Flannery, Bt., M.Inst.C.E., M.I.Mech.E., Chairman of Callender's Cable & Construction Co. Ltd., and a Director of Barclays Bank Limited.

RHODESIA RAILWAYS APPOINTMENTS

Mr. J. Hopwood, Operating Superintendent, Bulawayo, to be Chief Superintendent of Transportation, *vice* Mr. W. B. Dawson, retired.

Mr. J. P. Atkinson, Assistant Operating Superintendent, Bulawayo, to be Acting Operating Superintendent.

Mr. S. E. Quicke, Mechanical Assistant, to be Assistant Mechanical Superintendent, Bulawayo.

Mr. N. T. Hunt, Stationmaster, Bulawayo, to be Acting Assistant Operating Superintendent.

Mr. James Hopwood, Operating Superintendent, Bulawayo, Rhodesia Railways, who, as recorded above, has been appointed Chief Superintendent of Transportation, served with the Argentine Great Western Railway, from 1896 to 1902, before going to Rhodesia. His service with the Beira, Mashonaland, and Rhodesia Railways commenced with a period as clerk in the Traffic Superintendent's Office. After being Station Foreman at Gwelo, Mr. Hopwood held posts as Stationmaster there and elsewhere, before becoming, in 1918, Chief Clerk to the District Traffic Superintendent, Salisbury. He acted as District Superintendent on several occasions, and in 1922 was appointed Assistant Traffic Superintendent and acted as District Superintendent at Beira and Salisbury. In 1926 he became District Traffic Superintendent

at Livingstone, and was transferred in 1931 to Broken Hill when the district headquarters were moved. In 1932 he was transferred to headquarters at Bulawayo as Acting Operating Superintendent, and was confirmed in that position in 1934. Mr. Hopwood acted as Chief Superintendent on several occasions.

Mr. R. A. Blakeborough, Chairman of J. Blakeborough & Sons Ltd., has been elected to succeed Mr. O. E. Dickinson as Chairman of the British Valve Manufacturers' Association for the ensuing year.

Mr. M. Brennan, of Roscommon, has been nominated unanimously as President of the Irish Tourist Association for the coming year.

Dr. W. A. Macfarlane has been appointed Director of Fuel Efficiency in the Ministry of Fuel & Power.

Mr. Carl Niderost, K.C., a Saskatoon lawyer, has been appointed Assistant Manager of the Personnel Department, Canadian Pacific Railway. His duties will cover personnel problems arising from the war, and problems expected to occur in the post-war period. Mr. Niderost was Mayor of Saskatoon in 1939 and 1940, and for two years was Chairman of the court of referees under the Unemployment Insurance Act which handled selective-service cases. He is a graduate of the University of Saskatchewan, and was appointed King's Counsel in 1935.

Mr. W. T. Smyth, Chief Clerk, Goods Section, Audit Department, Great Northern Railway (Ireland), retired recently after 47 years' service.

INDIAN RAILWAY STAFF CHANGES

Mr. G. W. Browne has been confirmed provisionally as Deputy Chief Mechanical Engineer, E.I.R.

Mr. N. K. Sen has been appointed to officiate as Deputy Chief Accounts Officer, E.I.R., as from March 2 last.

Mr. F. G. Langdon has been confirmed permanently as Chief Engineer, G.I.P.R.

Mr. W. Hood has been confirmed permanently as Deputy Chief Engineer (Construction), G.I.P.R.

Mr. C. T. Venngopal has been appointed to officiate as Deputy Chief Accounts Officer, G.I.P.R.

Mr. J. N. E. Nagle has been confirmed permanently as Deputy Chief Transportation Manager, B.A.R., while continuing to officiate as Chief Commercial Manager.

Mr. R. T. Collins has been confirmed provisionally as Deputy Chief Accounts Officer, B.B.C.I.R.

Mr. J. W. Henderson and Sardar Bahadur S. S. Gyani have been promoted as Deputy Chief Operating Superintendents, N.W.R., in a provisionally-permanent capacity.

Mr. J. C. O'Neill, Deputy Chief Engineer, N.W.R., has been permitted to retire from Government service, as from January 15.

SOUTH AFRICAN RAILWAYS & HARBOURS

Mr. T. J. Dry, Assistant Architect, Chief Civil Engineer's Office, has been appointed Superintendent (Housing), General Manager's Office, Johannesburg.

Mr. E. L. Janisch, Assistant Engineer, Grade 1, Civil Engineering Department, Stutterheim, has been appointed District Engineer, System Manager's Office, Durban.

Mr. T. G. Watson, Assistant Engineer, Grade 1, System Manager's Office, Johannesburg, has been appointed District Engineer (New Works), Civil Engineering Department, Johannesburg.

TRANSPORT SERVICES AND THE WAR—211

Winter Closing Hours

The Defence Regulation governing the winter closing hours of shops throughout the country will be in force from Sunday, November 7, to Saturday, March 4 (inclusive), and will require shops other than those in the exempted trades to close at 6 p.m. (7.30 p.m. on the late night) throughout this period. As in previous years, shops in the central areas of London will close at 4 p.m. during the period from November 7 to Saturday, January 22, 1944 (inclusive).

London Transport Winter Services

On Monday, October 4, the London Transport winter train services came into operation. Generally, the normal and peak hour services are on the same basis as previously with some modifications to ease the loadings on certain trains. On all lines, the evening peak hour services have been advanced slightly to provide for earlier homeward journeys in the lengthening blackout. The London Transport winter schedules for trams and trolleybuses will come into operation on October 20, and those for Central buses on October 27.

L.M.S.R. Anti-Gas Trains

There are now 20 L.M.S.R. breakdown trains equipped with special anti-gas vehicles. They are situated so strategically that they can reach rapidly any portion of the L.M.S.R. system from Southend and Bristol to Thurso. These anti-gas vehicles are kept fully equipped, and stocked with everything likely to be necessary for working under war gas conditions. They are divided into two compartments; one is used for equipment and special clothing, and the special anti-gas squad travels in the other. The latter compartment, which is fitted with wash basins, is used also as a dressing room.

"Service"

The following is an extract from a letter which recently appeared in *The Yorkshire Post* from Sir Eugene Ramsden, M.P.:

"Since the beginning of the war it has been my lot to spend a good deal of time travelling, and I know how very helpful and kind the staff of the railway companies can be. I have benefited from this help myself and seen countless others do so as well.

I feel we owe a great debt of gratitude to all those who, under difficult conditions of war, are responsible for running and maintaining our railway services. They have done admirable work."

As a sequel, Sir Eugene received the following letter, which we reproduce from the columns of the *L.N.E.R. Magazine*:

"From: A Signal Cabin,
Somewhere on the North East Coast.
September 6, 1943.

SIR,—I was deeply moved when reading your letter in this morning's *Yorkshire Post* to think that a gentleman whose time is so valuable, and upon whom rest the worries and the anxieties of Parliament, could find time to show your personal appreciation for the work we railwaymen are doing towards helping to bring the dawn of victory nearer. We do, Sir, most deeply appreciate your remarks, and whilst often we get hard knocks about trains being dirty and very often late, soon we shall hear they are not heated enough, yet amidst all these little difficulties we can always give in return a cheery word or smile, and with encouragement from such gentlemen as you, I can assure you, Sir, the railwaymen my colleagues will not fail in any task given to them to do in winning the war effort. Please

accept this letter as from myself and fellow workmates who have not the time to write such a letter of appreciation.

Yours most respectfully,
(Signed) RAILWAY SIGNALMAN,
London & North Eastern Railway"

A Wartime Traffic Peak

During the week ended September 17, the L.N.E.R. forwarded no fewer than 324,825 loaded wagons (an average of over 46,400 a day), the highest figure it has ever achieved since the beginning of the war. Its previous record was 323,549, which was attained during the week ended October 16 of last year.

G.W.R. Record Wagon Turnround

During the weekend October 2-3 on the G.W.R. 27,000 wagons were unloaded. This figure constituted a record, and the use of voluntary spare-time labour contributed largely to the achievement. The G.W.R. has now secured the quickest turnround of wagons recorded on its system. (See editorial note page 375).

London Travel Information Kiosks

The 16 travel information kiosks in the London area which were opened during the period of intensive air raiding in 1940-41, when passenger transport facilities were liable to sudden changes as the result of air raid damage, have been closed. The 40 men and women who have staffed these kiosks are released for other duties, in the main in railway service. The Railway Executive Committee is prepared to re-open the kiosks within 24 hours should the necessity arise. Recently, enquiries have been answered at the rate of 120,000 a month; latterly these enquiries have come mainly from Overseas troops.

Wagon Repairs by Part-Time Staff

In the latter part of August, the L.M.S.R. inaugurated a scheme to speed up the repair of wagons by using volunteer labour at weekends. It is working in the 5 Scottish districts of Glasgow, Blantyre, Motherwell, Edinburgh, and Kilmarnock, and also at Carlisle. In the early stages about 80 men volunteered for this weekend labour, and during the first weekend at which they

were at work more than 1,000 wagons were dealt with. The men have come from every grade of the railway (apart from those normally employed on wagon repair work) and from various trades which generally free their employees on Saturday afternoons and Sundays. Ordinary wage rates are paid for Saturdays, and double rates on Sundays. Volunteers from outside the railway service are not accepted without the assurance that their normal work does not require their services at the weekend, and that their employers agree to their participation in the scheme. In an editorial note, page 374, we refer to other aspects of the use of part-time volunteer labour to assist the railways in their heavy wartime tasks.

Improved Sign Lighting at Kings Cross

With the approval of the Ministry of Home Security, the L.N.E.R. is experimenting with the use of fluorescent paint, excited by means of ultra-violet rays, for the various signs in the booking hall at Kings Cross station. The principal feature of the scheme is the use of fluorescent letters or backgrounds for the notices. The train indicator and the hands and quarter hours of the clock have been treated similarly. The fluorescent paint is excited by means of ultra-violet rays emitted directly or by reflection from lamps contained in a small housing adjacent to each sign, which is visible from a distance of 50 ft. The effect at night is that the large signs appear to consist of yellow letters on a dark background, and the small signs black letters on a yellow background.

Eastern Coastal Restrictions Lifted

The Ministry of Home Security, after consultation with the Regional Commissioner and the military authorities, has reduced the coastal area in the Eastern Civil Defence region to which restrictions on taking up residence apply. From October 1, these restrictions are confined to the towns of Yarmouth, Lowestoft, Southwold, Aldeburgh, Felixstowe, Harwich, Frinton & Walton, Clacton, Maldon, and Southend, and to a number of parishes in the vicinity of Southwold, Harwich, and Felixstowe, and the Maldon Rural District. These coastal areas from which the residence ban has been lifted are included in a Regulated



A 2 1/2-ton U.S.A. army lorry which has been fitted with flanged wheels for railway service, and is engaged on shunting work in England. It can handle 7 or 8 wagons. The driver in peacetime works on the Reading Railroad in New Jersey

Area, and entry may still be restricted by the military authorities without warning. The restrictions may be reimposed at a later date at short notice, but, meanwhile, the Order releases from the residence ban such coastal resorts as Hunstanton, Sheringham, Cromer, Mundesley, and Caister, and other places within 10 miles of the coast.

Air Attacks on Railway Targets

Large numbers of railway centres in occupied Europe were attacked successfully by U.S.A.A.F. Marauders and R.A.F. Mitchells, Venturas, and Bostons during September, in addition to continuous interference with locomotives and goods trains by fighters, fighter-bombers, and light bombers of Fighter Command. The following important railway centres were attacked, some of them on a number of occasions:—

Rosendaal	.....	.....	Holland
Serqueux	.....	.....	Northern France
Lille	.....	.....	Northern France
Courtrai	.....	.....	Belgium
St. Pol	.....	.....	Northern France
Hazebrouck	.....	.....	Northern France
Amiens	.....	.....	Northern France
Rouen	.....	.....	Northern France
Abbeville	.....	.....	Northern France
Ghent	.....	.....	Belgium
St. Omer	.....	.....	Northern France

Nearly 1,000 tons of bombs were dropped on wagons and their repair shops, on marshalling yards, and on locomotive shops and sheds, during these attacks.

Plots of the Free French Lorraine Squadron, flying Bostons, bombed the marshalling yard at Serqueux on September 2. They saw bursts on the yards the whole way from north to south. At least one direct hit was scored on a locomotive shed.

Apart from these attacks, more than 60 locomotives were put out of action by our fighters, fighter-bombers, and light bombers.

This summary does not include damage done to German or German-controlled railway centres by Bomber Command's heavies.

Goods Services in Eire

On October 1, the Great Southern Railways Company introduced reorganised road merchandise services in the County of Sligo and the County of Leitrim. This is a further extension of what has become known as "the Mayo Pooling Scheme," and is in accordance with the proposals recorded in our August 27 issue, page 214.

Railway Restoration in Java

All railway lines in eastern Java destroyed at the time of the evacuation have been restored, and traffic has been resumed on the line between Babad and Tuban (Toeban), to the west of Soerabaya, according to a Japanese broadcast.

Voluntary Work in Russia

Some 5,000 railway workers of the Kaganovich line recently undertook to give voluntary help in the construction and repair of rolling stock. In one day's voluntary work they repaired 11.5 km. of railway track and did much other work.

South of France Railway Cuts

An announcement has been issued by the French National Railways in Lyons informing the public that "by reason of the transfer of rolling stock, the railways will be obliged to reduce passenger traffic considerably from October 14. This will affect principally railway traffic from Lyons to Ambérieux and Haute-Savoie, Chalon-sur-Saône, Valence, Marseilles, Bourg, Nîmes, Macon, Grenoble, St. Etienne, and Roanne." It will be noticed that these places are in the direction of the Italian frontier and the French Mediterranean coast.

It has been assumed in some quarters that these reductions are an indication that the Germans have commandeered for mili-

NOTICE

INCREASE OF THROUGH RATES FOR THE CONVEYANCE OF MERCHANDISE AND LIVESTOCK BETWEEN STATIONS AND PORTS IN GREAT BRITAIN AND STATIONS AND PLACES IN EIRE

INCREASE OF ADDITIONAL PORT CHARGES ON MERCHANDISE AND LIVESTOCK

The Railways and Steamship Companies trading between Great Britain and Ireland give NOTICE that—

(i) In consequence of increases in rates for the conveyance of Merchandise and Livestock traffic on the railways in Great Britain and in the ports in Great Britain and charges for the conveyance of such traffic by Goods and Passenger train services between Stations and Ports in Great Britain and Stations and Places in Eire will be increased on and from 1st October 1943.

(ii) In consequence of the further increase by the Dublin Port and Docks Board of charges made by them on Merchandise and Livestock, the through and Port to Port rates and charges for conveyance of such traffic by Goods and Passenger train services between Stations and Ports in Great Britain and Dublin and certain stations and places on the Great Southern Railways and the Grand Canal (Eire) will be increased on and from 1st October 1943 by amounts additional to those raised on and from 1st April 1942.

* Full details of the above-mentioned increases may be obtained on application at any Station or Depot of the British Railways or Offices of the Steamship Companies concerned.

Poster announcement of increases in Anglo-Eireann through rates from October 1 as a result of the Irish railway, canal, and dock increased charges

tary purposes large quantities of rolling stock on the railways of southern France. An announcement of the Algiers radio has stated that more than 12,000 French locomotives have been sent to Germany, and that another 4,000 are awaiting repair in France.

German Oil Through Sweden

The Swedish Foreign Ministry announced on October 1 that all transit of oil through Sweden ceased at the end of September. When the transit of German soldiers and war materials through Sweden was stopped in the middle of August, there were feelings of irritation in both Sweden and Norway because petrol, which, though not considered war material in the full sense, is essential for the Germans, was still allowed to pass through Sweden. Because of what were stated to be important reasons, it was not then announced that a time limit had been imposed for petrol.

The Yunnan Railway

A long and detailed report was made recently by M. Massigli, Commissioner for Foreign Affairs to the French Committee of National Liberation, on the subject of the Yunnan Railway. This report said that the renunciation by the Vichy Government of French extra-territorial rights in China was not regarded as binding on the Committee of National Liberation, which, while in agreement with the inter-Allied principle which is intended to benefit China, cannot endorse an action which had been intended to benefit Japan. As it is recognised by the committee that it must lay the foundation of new relations with China on the same sound bases as those before the war, it feels bound to ensure that no property which is lawfully that of French subjects shall be alienated without valid cause or just compensation, even as it would do its best to restore to Chinese citizens any property they owned in France which had been unlawfully expropriated by Vichy under German instigation. The requisitioning of the Yunnan line was doubtless necessary to the Chinese war effort, which is a vital part of the Allied war effort, and par-

ticularly important to France, which has possessions in Indo-China. This does not mean, however, that the railway should pass out of French private ownership. The committee, therefore, assumes that the requisitioning can be only for the duration of the war and as long afterwards as military necessity demands.

The Burma Railways

Since January 1, 1929, the Burma Railways have been worked by the Government, and, with the separation of India and Burma, these railways became an autonomous entity on April 1, 1937. They consist of 2,059 route miles, entirely of metre gauge. At present, the whole of the railway system in Burma is in the hands of the Japanese occupation authorities, and a recent message from Tokio said that the railways were included among properties which are to be handed over to the Burmese Government established by Japan. Other properties to be transferred to this puppet regime are announced as harbour installations, mines, and factories.

Women Workers on an American Railway

On the Atchison, Topeka & Santa Fe Railway of the United States, the number of women on the payroll has now increased to 3,427, 35 per cent. of whom are engaged on work previously done by men. In the engine sheds and shops they are acting as cleaners, oilers, and as helpers to machinists, blacksmiths, electricians, and sheet metal workers; they also operate steam hammers, drill presses, and locomotive turntables. One department in which there has been a large increase in women employees, taking over jobs done formerly by men, is the telegraph department, in which 210 of the staff of 1,431 are women.

Reducing U.S.A. Football Travel

During the 1943 football season it is estimated that team travel will be reduced by 700,000 miles as a result of revision of match schedules and reduction in the size of teams. This is a 37 per cent. reduction compared with 1942; and further reduction is being effected by curtailment of trips for training purposes. As far as possible, teams will travel in coaches instead of in Pullman sleepers, and sleeping accommodation will not be reserved for them more than one day in advance. Most berth accommodation is now reserved so far in advance by those who must travel, and for members of the Forces, that this 24-hr. advance reservation will in any event confine football teams almost exclusively to coach travel.

North African Highway

Substantial progress has already been made with the construction and restoration of a modern highway along the coastal areas of North Africa, linking Egypt with Morocco. Agreement has been made between the British and Egyptian authorities whereby the widening and improvement of the coastal road from Alexandria to Mersa Matruh is being undertaken by the Egyptian Government, and the work thence to the Libyan border by the British Government. The highway across Libya to Tunisia, which was built by the Italians but suffered substantial damage during the Western Desert campaign, is being restored and improved by the British authorities; and similar action is expected on the part of the authorities in Tunisia in regard to the most recently-conquered portion. The restoration and improvement of transport facilities in Morocco and Algeria is being undertaken by Allied Forces commanded by General Eisenhower.

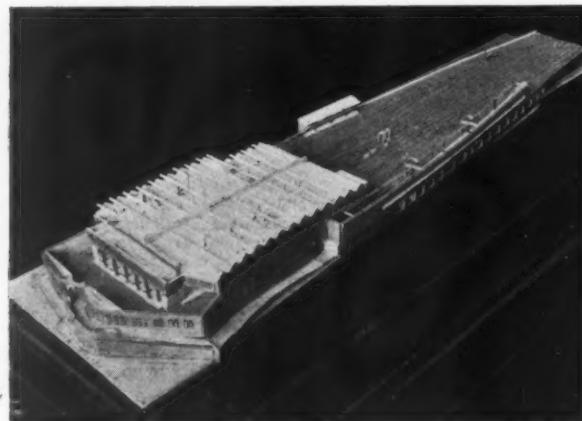
Bishopsgate Goods Station Reconstruction

In common with other industries, the railways are giving attention to the matter of post-war development, although at the present time their efforts are concentrated on the contribution they are giving to the successful prosecution of the war. Included in the programme of post-war works the question of reconstruction of present, or the erection of new, goods stations and depots must figure to an important extent. On the L.N.E.R. system the goods station at Bishopsgate, London, is among those which are receiving consideration.

Bishopsgate includes the site of the old Shoreditch terminus of the Eastern Counties Railway, which was used for passenger

traffic by the Great Eastern Railway up to the year 1874 when Liverpool Street Station was constructed. Shoreditch terminus was converted into a goods station and was brought into use as such in 1881. As is the case, doubtless, with some other transformations, and as a result of the increasing traffic Bishopsgate was called on to handle in normal times, its present physical lay-out is the accumulation of additions and alterations carried out over a period of years which do not perhaps afford the same advantages as an entirely new goods station constructed on a new site. Because of the somewhat complicated nature of its make-up, therefore, it was considered useful to have a model for the purpose of discussion when the future of Bishopsgate came under examination.

A model was made, as shown in the accompanying illustrations. It is the work



[Photos]

The model of Bishopsgate Goods Station. Left: Complete. Right: In parts

[T. M. Spurge



Staff and Labour Matters

Electrical Contracting Wages

The wages (war adjustment) agreement made between the National Federated Electrical Association and the Electrical Trades Union on November 24, 1939, by an agreement dated September 24, 1943, has been amended to provide for the war addition to be calculated on an hourly basis and thus rank for overtime. Hitherto the war adjustment had been calculated on a weekly basis. In accordance with the new agreement the war adjustment is 4½d. an hr. as from the second pay-day in October, 1943.

Canteen Workers' Wages

The National Joint Industrial Council for the industrial catering trade comprising the National Society of Caterers to Industry on the one hand and the National Union of General & Municipal Workers, the National Union of Distributive & Allied Workers, and the National Union of Railwaysmen on the other hand, has reached an agreement under which the minimum wages for adult workers will be increased by 2s. 6d. a week with proportionate increases for workers under 21 years of age as from the week commencing October 11. The new minimum weekly rates for adult workers, who receive meals and other emoluments valued at 10s. a week also, are: men chargehand cooks, 80s.; men assistant cooks, 70s.; women chargehand cooks, 55s.; women assistant cooks, 50s.; kitchen porters, 65s. (London), 62s. 6d. (outside London); women canteen clerical workers, 48s. (London), 45s. 6d. (outside London); women cleaners and general workers, 43s. (London), 41s. 6d.

(outside London). The new rates will apply to workers in railway canteens in which the catering is undertaken by contractors who are members of the National Society of Caterers.

The Catering Wages Commission which was set up under the Catering Wages Act is at present inquiring into the machinery of negotiation for regulating wages and conditions in the catering industry and already has met to consider the machinery for industrial canteen workers. It is understood that the railways and the National Union of Railwaysmen have submitted evidence to the commission concerning railway canteens.

Engineering Wages

In our issue of last week we gave details of the interpretation given by the National Arbitration Tribunal on three points referred to it by the engineering employers and the trade unions. Below are particulars of the other questions referred to the tribunal arising out of the March award No. 326:—

Question 4

Should the allowances (time-and-a-half and time-and-a-quarter) payable for work performed on oil-carrying vessels be calculated on the new consolidated basic rate?

Decision on Question 4

A strict interpretation of the award requires that, while the agreements relating to the wage rates for workers employed in connection with oil-carrying vessels remain operative, in the case of both plain-time workers and "payment-by-result" workers who come within the terms of such agreements the new district basic time rates provided by the award shall be subject to the

addition of 25 per cent. or 50 per cent. according as the workers are entitled under such agreements to time-and-a-quarter or time-and-a-half on their district basic time rates; and that the national bonus payable in the case of plain timeworkers shall be 21s. 6d. a week.

Questions 5 and 7

5. Broadly, is it the intention of the award that no worker should be in a position to derive more than 6s. for each 47 hr. benefit from the award for equal effort?

7. Broadly, was it the intention of the tribunal that without having regard to existing agreements and customs no worker should be in a position to derive more than 6s. benefit for a normal 47 hr. week for equal effort?

Decision on Questions 5 and 7

The tribunal does not consider that any useful purpose would be served by expressing opinions in general terms as to the intentions of the award independently of the proper construction to be placed on its terms, but it would seem to be clear that in certain cases, for example, where the percentage has been raised from 25 per cent. on a basic rate of 46s. to 27½ per cent. on a basic rate of 66s., the worker of average ability would under the award obtain an increase of approximately 6s. 8d., but the worker of more than average ability would, working at his normal speed, obtain a larger increase.

Question 6

Is it intended that without extra effort where the times allowed comply with clause 4 (I) (b) (iii) of the award men who are not of average ability and who are not earning 27½ per cent. of the consolidated

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basic rate should have their wages brought up to that amount?

Decision on Question 6

Provided the "bonus or basis times" for all workers on a particular job are such as will enable a workman of average ability to earn at least 27½ per cent. over the district basic time rate provided by the award, the fact that a worker of less than average ability earned less than 27½ per cent. over the district basic time rate would not in itself imply that the "bonus or basis times" did not comply with the requirements of the award and it would not be necessary, so far as the award is concerned, that the wages of such worker should be brought up to 27½ per cent. or any other percentage above the district basic rate.

Question 8

Will the tribunal define clearly the first sentence of clause (3) (b), namely:—Lieut rates, compensatory or other bonuses, merit rates, and the words "commonly applied."

Decision on Question 8

The clause in paragraph 4 (3) (b) referring to lieut rates, compensatory or other bonuses, or merit rates commonly applied, is identical in wording with a clause in the national agreements concluded in 1942 between the employers' federation and the trade unions relating to skilled engineering workmen employed on time work as maintenance men, inspectors, setters-up and markers-off. The tribunal considers therefore that if differences arise between workers and their employers as to whether any particular additions to pre-award district basic rates are properly to be regarded as falling within one or other of the terms specified in the question, the parties to the award will find no great difficulty in reaching agreement in most of the cases. The tribunal does not think it would be possible for it to frame comprehensive definitions of these terms to cover every case which may arise. If any difference regarding the inclusion or otherwise within the scope of the "pro tanto" provision of the award of any specific pre-award addition to the district basic rate cannot be settled after negotiation between the parties to the award, the tribunal will be prepared to give a decision on the matter, after hearing the parties (if that is desired) in relation to the facts of the particular case. In deciding such a question the tribunal will require to consider not only the terms of the "pro tanto" clause itself but the provision contained in the last sentence of paragraph 4 (3) (b) relating to additions to the minimum rate under joint national or district agreements.

The strike of the engineering workers at Barrow referred to in our last week's issue terminated on October 4, when the following recommendation of the strike committee was approved:—

"That we recommend resumption of work under the terms offered with a strong recommendation that the trade unions immediately negotiate a changeover from premium bonus to time-piece, which the firm says can be operated in 7 days."

COLOMBO TRAMWAYS PURCHASE SCHEME.—The Colombo Municipal Council discussed recently a scheme for the purchase of the Colombo tramways and decided to adopt a recommendation to the effect that, if the Council were to purchase the tramways, the present management should operate them for the duration of the war on behalf of the Council. The Council also recommended that the tramway company's contract branch should function as at present, subject to financial adjustments.

Institute of Transport Centre at Hull

At a lunch held at the Guildhall, Hull, on September 30 to inaugurate the Hull & District Centre of the Institute of Transport, the host was Mr. Robert G. Tarran, President of the Hull Traffic Association, the activities of which are to be merged with those of the Centre. There was a large attendance of members of the Hull Traffic Association, and of the Institute of Transport, including the Chairmen and Honorary Secretaries of the Yorkshire and Northern Sections.

Mr. J. S. Nicholl, C.B.E., President of the Institute, gave a short address, in which he referred to the excellent work of the Hull Traffic Association in bringing transport men together and in promoting trans-

port education in that city. He went on to discuss the objects and work of the Institute, and said that, although every arm of transport had its own technique, there was a vast range of common ground. It had been the grasp of this which had led to the foundation of the Institute some twenty-four years ago by men of wide vision and high purpose.

Mr. D. Murray, Assistant Goods & Passenger Manager, North Eastern Area, L.N.E.R., spoke on behalf of the Hull Traffic Association in the absence, due to illness, of Mr. W. A. Winson, who had been largely instrumental in founding the Association. Mr. S. Hattan, Chairman of the Association, who becomes Chairman of the new Centre, expressed thanks to Mr. Tarran for his services to the Association as its President during the past five years.

Indian Railway Budget

The accompanying table shows the principal figures embodied in the Indian Railway Budget for the year ending March 31, 1944, together with the revised 1942-43 Budget figures for comparison.

As will be seen, very little change in either receipts or operating costs are expected in the current year. It may be added that no figures are shown as representing sums transferred from the railway reserve fund in either year's budget. Of the Rs. 72 lakhs expected increase in State

lines' traffic-earnings, Rs. 43½ lakhs are on freights; but the corresponding working expenses are estimated more than to counteract this increase by Rs. 176 lakhs, although this is partly neutralised by Rs. 122 lakhs less to be paid to worked lines, due to expected improvements in their traffics. After taking into account all the other debit and credit items, the net result is an insignificant expected drop in total receipts of Rs. 38·6 lakhs (£289,500).

STATEMENT OF THE REVENUE OF THE CENTRAL GOVERNMENT IN INDIA AND ENGLAND FROM RAILWAYS
(In thousands of rupees)

HEADS OF REVENUE	Revised budget, 1942-43	Budget estimate, 1943-44		
		India	England	Total
State railways—		Rs.	Rs.	Rs.
(A) Commercial lines—				
Gross receipts—				
Passenger traffic earnings—				
Upper class	673.00	6,80.00		6,80.00
Third class	35,03.50	35,19.00		35,19.00
Other coaching-traffic earnings	14,54.00	14,59.50		14,59.50
Goods-traffic earnings	86,06.00	86,49.50		86,49.50
Sundry other earnings	3,69.50	3,69.98	2	3,70.00
Total earnings	1,46,06.00	1,46,77.98	2	1,46,78.00
Earnings of State railways	1,46,06.00	1,46,77.98	2	1,46,78.00
Suspense	40.00	33.00		33.00
Gross receipts of State railways	(e) 1,45,66.00	1,46,44.98	2	1,46,45.00
Deduct—				
Working expenses of State railways	(f) 81,64.50	84,32.20	16,55	84,48,75
Surplus profits paid to Indian States and railway companies	85.70	80.80		80.80
Payments to worked lines—				
(i) Net earnings	2,67.00	1,45.00		1,45.00
(ii) Subsidy, rebate, etc.	5.52	4.05		4.05
Net receipts	60,43.28	59,82.93	-16,53	59,66,40
(B) Strategic lines—				
Gross receipts	3,59.00	3,55.00		3,55.00
Deduct—				
Working expenses	2,20,50	2,20,25		2,20,25
Net receipts	1,38.50	1,34.75		1,34,75
Total net receipts, commercial and strategic lines	61,81,78	61,17,68	-16,53	61,01,15
Subsidised companies—				
Government share of surplus profits, etc.	6.45	4.70	80	5.50
Railway miscellaneous receipts—				
(a) Commercial lines—				
Interest on railway depreciation reserve fund balances	2,58,61	3,08,07		3,08,07
Interest on railway reserve fund balances	13,22	17,26		17,26
Dividend on investments in branch lines and other miscellaneous receipts	34,85	23,28	2	23,30
(b) Strategic lines—				
Interest on depreciation fund balances	14,15	15,28		15,28
Total receipts	65,09,16 (£48,818,700)	64,86,27 (£48,647,025)	-15,71 (£-117,825)	64,70,56 (£48,529,200)

(e) Includes 5,19.00 earnings of worked lines
(g) Includes 3,05.00 earnings of worked lines

(f) Includes 2,52.00 working expenses of worked lines
(h) Includes 1,60.00 working expenses of worked lines

Notes and News

Churchill Machine Tool Co. Ltd.—An interim ordinary dividend of 15 per cent., less tax, has been declared, the same as a year ago.

Swedish State Railways Surplus.—Of Swedish State enterprises, which showed a net surplus for 1942 of kr. 285 million, the State Railways accounted for the highest individual figure (kr. 124 million).

Railway Accident in France.—According to a French broadcast, an express train bound for Lyons crashed into a derailed goods train near Chalon-sur-Saône on October 6. Twenty-one persons are stated to have been killed, and about 90 injured.

Barsi Light Railway Co. Ltd.—A second interim dividend has been declared on the ordinary stock of 2½ per cent. actual, payable on October 28. No final dividend will be recommended at the annual general meeting to be held later.

Chilean Railway Nationalisation.—A private railway line extending 60 km. (37 miles) between Monte Aguila and Antuco in the Concepcion district of Chile has been acquired by the Chilean Government. The railway carries both freight and passengers, and traffic is reported to be fairly heavy throughout the year.

Port of London Accounts Regulations.—The Minister of War Transport on September 17 made regulations with respect to the accounts of the Port of London Authority (S.R. & O. 1943, No. 1326). The regulations effect minor alterations in the forms of account prescribed by the Minister under the Port of London Consolidation Act, 1920, including the separation of certain composite items into their component parts.

Bus Groups.—The British Electric Traction group of bus companies owns and operates some 8,500 public service vehicles in England and Wales. The Tilling group now owns upwards of 7,000 buses. The British Omnibus Companies Public Relations Committee has a membership of 61 companies with a total of 13,268 buses. Operators of 39,000 passenger vehicles (buses, trolleybuses, and trams) are represented in the Public Transport Association.

Maquinista Terrestre y Maritima.—The report of this Barcelona locomotive building company for 1942 shows increased earnings compared with those of the previous year. The net profit amounted to 3,079,580 pesetas, against 2,457,470 pesetas in 1941; and a dividend was declared of 5 per cent., or 25 pesetas a share, less tax. A large number of locomotives was repaired, and 26 were delivered, including one of the Santa Fe type series "5,000." Work is proceeding on high-speed passenger locomotives of series "2,700."

U.S. Class I Railways.—For the five months ended May 31, 1943, Class I railways in the United States earned total operating revenues of \$3,599,292,997, an increase of \$942,221,386, or 35.5 per cent., in comparison with the corresponding period of 1942. Total operating expenses amounted to \$2,178,613,873, an increase of \$399,823,445, or 22.5 per cent., and the operating ratio improved from 66.95 per cent. to 60.53 per cent. Net railway operating income was \$596,288,148, an increase of \$163,342,309, or 37.7 per cent. The average mileage was 229,505, against 231,530. Figures based on the annual reports and revised show that total operating revenues for the calendar year 1942 were

\$7,466,227,054, total operating expenses \$4,601,429,943, and net railway operating income \$1,480,940,760.

W. T. Henley's Telegraph Works Co. Ltd.—An interim dividend is to be paid of 5 per cent., less tax, the same as a year ago.

Institute of Transport Address.—General Sir Thomas S. Riddell-Webster, K.C.B., D.S.O., Quartermaster-General to the Forces, has accepted an invitation to address the luncheon meeting of the Institute of Transport to be held on December 3.

Ransomes & Rapier Limited.—In respect of the year ending December 31, 1943, an interim dividend has been declared on the ordinary stock of 2 per cent., free of tax, the same as a year ago.

Accident at March.—Three persons are stated to have been killed, and two injured, when a car came into collision with a passenger train at Middle Drove crossing, March, L.N.E.R., on October 11.

New Argentine Air Line.—The Argentine Government has recently authorised the Army Air Force Command to establish an air line for the transport of passengers and mails between Buenos Aires and the Iguala Falls, with intermediate calls at Colonia (Uruguay), Monte Caseros, and Posadas.

Permanent Way Institution.—At a meeting of the Manchester & Liverpool Section of the Permanent Way Institution to be held in the Lecture Hall, City of Liverpool Technical College, Byrom Street, Liverpool, on October 16, at 3 p.m., a lantern lecture on "Timbered Layouts" will be given by Mr. D. V. Adams, Chief Draughtsman of Taylor Bros. (Sandiacre) Ltd.

C.P.R. Coach Conversions.—The first of 19 first class passenger coaches to be converted from steel buffet-parlour cars has been placed in service by the Canadian Pacific Railway; the balance will be delivered from the company's Angus shops shortly. Accommodation will be provided for 88 passengers in some of the coaches, and for 84 in others. As reconstructed, each coach will measure over 83 ft. in length, and will be carried on bogies with cast-steel frames.

Newfoundland Railway Traffic Decline.—The volume of freight carried by the Newfoundland Railway has declined appreciably recently. Wagon loadings in April, 1943, totalled 2,881, compared with 3,418 in April, 1942. The figures for the first three weeks in May of each of the 2 years were 2,307 and 3,145, respectively. This decline is attributed to the decrease in the volume of general imports as a result of scarcity of supplies, and to import restrictions. Moreover, the major construction projects in Newfoundland have now been completed. Passenger travel continues heavy, with the volume still well above pre-war totals, and traffic prospects are good.

The Tree-Lopping Season.—October 1 marked the beginning of the tree-logging season over 2,174 miles of London Transport bus routes. The period during which trees may be pruned or cut is laid down by the Highways Act, 1935, Section 66, and London Transport has until the last day of March next to do all that is necessary. The programme occupies the full six months, and provides work for five vehicles which have been adapted for the purpose. Some are obsolete buses which, at one time, were running in the service of independent London owners. The upper deck is cleared of seats and an open gallery is formed, from

which the men can work in any direction. Permission to cut the trees is, of course, first sought from the property-owners concerned, and very seldom is withheld.

Pullman Incorporated.—In the statement for the first half of 1943 it is recorded that the profits retained by the Pullman group of companies are running at a low rate in relation to total gross income (carrier revenue and manufacturing sales combined) which rose to a peak of \$214,281,913 for the first half of 1943 but yielded only \$4,500,323 (\$1.36 a share) for net income after taxes, i.e., a profit margin of only 2 c. on each dollar of gross. In

British and Irish Railway Stocks and Shares

Stocks	Highest 1942	Lowest 1942	Prices	
			Oct. 8, 1943	Rise/ Fall
G.W.R.				
Cons. Ord.	58	39	59	+
5% Con. Ord. (1950)	115½	105½	109½	+
5% Red. Pref. (1950)	109½	103½	107	—
5% Rt. Charge	133½	123½	125½	—
5% Cons. Guar.	130½	121½	123½	+
4% Deb.	117	105	108½	—
4½% Deb.	118	109	110½	—
4½% Deb.	125	113	117½	—
5% Deb.	137	127	129	—
2½% Deb.	77	70	7½	+
L.M.S.R.				
Ord.	28½	16½	31½	+
4% Pref. (1923)	62½	50½	60	+
4% Pref.	76½	67½	71	—
5% Red. Pref. (1955)	103½	94½	103½	—
4% Guar.	104½	97½	99½	—
4% Deb.	108½	101½	104½	—
5% Red. Deb. (1952)	111	107½	109½	—
L.N.E.R.				
5% Pref. Ord.	9½	2½	9½	—
5% Deb. Ord.	5	4½	4½	—
4% First Pref.	62	49½	60	+
4% Second Pref.	32½	18½	32½	+
5% Red. Pref. (1955)	95½	79	98½	—
4% First Guar.	98	88	95	—
4% Second Guar.	90	78	8½	—
3% Deb.	85	76	81	—
4% Deb.	106½	100	101	+
5% Red. Deb. (1947)	106	103	103	—
4½% Sinking Fund Red. Deb.	106	102½	105½	—
SOUTHERN				
Pref. Ord.	77	61½	75½	—
Def. Ord.	23½	14½	2½	+
5% Pref.	112½	104	10½	+
5% Red. Pref. (1964)	110½	105½	111½	—
5% Guar. Pref.	131	121½	123½	—
5% Red. Guar. Pref. (1957)	115½	109½	111½	—
4% Deb.	116	104½	107½	—
5% Deb.	134	125½	128	—
4% Red. Deb. (1962-67)	110½	106	107½	—
4% Red. Deb. (1970-80)	111	106½	107½	—
FORTH BRIDGE				
4% Deb.	109½	108	106	—
4% Guar.	105½	100	10½	—
L.P.T.B.				
4½% "A"	122½	111	113½	—
3½% "A"	131½	122	12½	—
3½% Guar. (1967-72)	95½	97½	98	—
5% "B"	121	111½	115½	—
5% "C"	56½	38	69	—
MERSEY				
Ord.	27½	20½	32	—
3½% Perp. Pref.	61½	56½	6½	—
4% Perp. Deb.	102½	99½	103	—
3½% Perp. Deb.	80½	76	7½	—
IRELAND				
BELFAST & C.D.	9	4	6½	+
G. NORTHERN				
Ord.	29½	12½	13½	+
G. SOUTHERN				
Ord.	25	10	20½	+
Pref.	29	12½	24	+
Guar.	53	35½	46½	+
Deb.	71½	55½	72	+

5 ex-dividend

the first half of 1942, net income amounted to \$7,088,841 (\$2.15 a share) after adjustment to a comparable tax basis and other allocations. The entire increase of \$70,297,111 in total gross income for the first half of this year over 1942 was more than offset by higher taxes, wages, and other operating expenses.

Manganese Bronze & Brass Co. Ltd.—The directors have declared an interim dividend of 7½ per cent., less tax, the same as a year ago.

Committee on Post-War Exports.—A committee appointed by the Engineering Industries Association to examine the question of post-war exports has drawn up a report; it advocates the formation of export groups which would take joint action to increase export sales and to reduce selling costs. The committee opposes the disposal of surplus war-like stores solely by a Government department, which, it says, would introduce competition with the manufacturer.

Henry Spurrier Memorial Grants Awards.—The Henry Spurrier Memorial Committee of the council of the Institute of Transport has awarded 18 grants amounting to £210 in value. Of the successful candidates, three were employed by Albion Motors Limited; three by the London Passenger Transport Board; two by Cerebos Limited; and one each by the Associated Equipment Co. Ltd.; Doncaster Corporation Transport; Great Western Railway; London Midland & Scottish Railway; London & North Eastern Railway; McNamara & Co. Ltd.; Metropolitan Transport Supply Co. Ltd.; Ministry of War Transport; United Counties Omnibus Co. Ltd., and West Yorkshire Road Car Co. Ltd. The last day on which entries for the 1944 awards, the conditions of which will be made available shortly, will be accepted is May 31 next.

Birmid Industries Limited.—This company controls undertakings which produce cast and fabricated light alloys (aluminium and magnesium) iron castings, brake drums, camshafts, crankshafts, etc. For the year ended October 31, 1942, the balance of profit and loss account was £118,920. The dividend of 10 per cent. plus a bonus of 7½ per cent., both less tax, was paid on December 17, 1942. In the statement issued by the Chairman (Mr. C. C. Maudslay) with the report and accounts, it was recorded that the results were in the opinion of the directors very satisfactory. Those responsible for the output of the Birmid group had strained every nerve to meet the increased demands for its products, and the directors took a pride in the feeling that their efforts had been successful. The adjourned general meeting took place on September 30.

Southern Railway C.M.E. Department Show.—The Chief Mechanical Engineer's Department (Lancing & Brighton), Southern Railway, recently held its first fruit, flower, vegetable, fur, and feather show in a new works canteen. There were nearly 700 entries, and the show was opened by Mrs. O. V. Bulleid, wife of the Chief Mechanical Engineer, who was introduced by the President, Mr. O. G. Hackett. Mr. Bulleid, in replying to the President, said that he was always glad to go to those works; and he was of the opinion that relaxation, especially in the way of a garden, was a means of bringing the workers together in a common interest. The show was a splendid beginning, and he hoped that it would be more extensive on the next occasion. The profits of the show are being divided between the Red Cross, the Southern Railway Orphanage, and the

National Union of Railwaymen Orphans Fund.

Thos. Firth & John Brown Limited.—Payment was announced for October 14 of an interim ordinary dividend of 4½ per cent., free of tax (same).

Accident near Keighley.—The locomotive and one coach of the 9.15 p.m. passenger train from St. Pancras to Edinburgh were derailed early on October 11, at Steeton & Silsden Station, L.M.S.R., near Keighley, Yorkshire, as the result of a collision with a goods train.

Companhia de Mocambique.—The ordinary general meeting of the Companhia de Mocambique will be held on October 30, at noon, at the offices of the company in Lisbon, 10, Largo da Biblioteca Publica, for the purpose of considering, and approving or modifying the report and accounts of the Council of Administration, and also the report of the Fiscal Council, for the year 1942.

Safest Year of War on Roads.—The number of deaths resulting from road accidents in the fourth year of war up to August 31 was 6,335, the lowest figure for any war year, and the lowest annual total recorded during the last fifteen years. The number of fatal road accidents during black-out hours in the first year of war was 4,504; in the year just concluded, the total was 2,261. The Ministry of War Transport states that, although much of the improvement at nights may have been due to the smaller volume of traffic and to vehicle-lighting concessions, there is no doubt that drivers, cyclists, and pedestrians generally are taking more precautions. Losses of life among children unhappily remained heavy. Road-accident deaths in the war years are shown in the following table:—

	Daylight	Darkness	Total
First year	3,854	4,504	8,358
Second year	5,773	4,304	10,077
Third year	4,663	3,030	7,693
Fourth year	4,074	2,261	6,335
Grand total			32,463

Madras & Southern Mahratta Railway Co. Ltd.—The directors have decided to recommend, at the next general meeting of stockholders, the payment on January 1, 1944, of a dividend of 3 per cent., made up of £1 15s. per cent. from guaranteed interest, 5s. per cent. from stockholder's revenue account, and £1 per cent. from reserve fund (free of income tax). This makes, with the £2 15s. per cent. paid on July 1 last, a total dividend of £5 15s. per cent. for the year ending December 31, 1943.

Presentation to Mr. T. E. Argile.—On October 6 a number of railway officers, members of the Railway Clearing House Goods Managers' & Superintendents' Joint Conference, Accountants' Conference, and Operating Superintendents' Conference made a presentation to Mr. T. E. Argile in connection with his recent retirement from the position of Chief Commercial Manager, L.M.S.R. Mr. W. M. Perts, Commercial Superintendent, Southern Railway (Chairman of the Superintendents' Conference), who presided, was supported by Mr. G. Marshall (Chairman, Goods Managers' Conference, and R.E.C. Goods Committee), Mr. G. Morton, Chief Accountant, L.M.S.R. (Accountants' Conference), Mr. T. W. Royle, Chief Operating Manager, L.M.S.R. (Operating Superintendents' Conference), and Mr. C. N. Mansfield, Assistant Chief Commercial Manager (Coal), L.M.S.R. (Mineral Managers' Conference). The Chairman opened the proceedings by referring to the 47 years during which Mr. Argile had been in the railway service, in which time he had made a host of friends, due to his

ability, kindness, and fair dealing, and the fact that he always played the game. Mr. Argile, in accepting the present, expressed his sincere thanks and appreciation, and stated he had been fortunate in having good friends, good assistants, and good luck; but that having good friends was the best of all.

Hoffmann Manufacturing Co. Ltd.—An interim dividend of 7½ per cent. has been declared, the same as a year ago.

Great Southern Railways' Future.—Speaking at a meeting of stockholders of the Great Southern Railways in Dublin on October 7, Colonel The O'Callaghan said that further interference with their capital would seriously affect the whole industrial security of the country. State interference, whittling down capital on the excuse that such a course was necessary to safeguard new capital, would frighten rather than attract investors. The large revenue obtained by the Government by way of road tax and tax on oil fuels should, in justice, be applied to making up the standard net revenue guaranteed to the railways by the 1924 Act.

Presentation to Mr. J. H. Hunter.—Mr. James H. Hunter, who retired on September 30 from the position of Solicitor & Rating Agent (Scotland), L.N.E.R., was the recipient, at the North British Hotel, Edinburgh, on October 6, of a presentation, on behalf of the officers, assistant officers, and retired officers of the company, by Lt.-Colonel the Hon. A. C. Murray, Chairman of the local board. Mr. R. J. M. Inglis, Divisional General Manager, Scottish Area, presided. Earlier, Mr. Hunter had received a gift from Mr. Miles Beevor, Chief Legal Adviser, London & North Eastern Railway Company, on behalf of the latter's department.

Contracts and Tenders

Below is given a list of orders placed recently by the Egyptian State Railways:—

British Tabulating Machine Co. Ltd.: "Hollerith" counting-machine cards.

Ruston & Hornsby Limited: Piston rings.

General Electric Co. Ltd.: Fuse carriers, bulkhead.

Babcock & Wilcox Limited: Links.

Clyde Crane & Engineering Company: Bevel pinions.

Davies & Metcalfe Limited: Spares for steam railcars.

Siemens Bros. & Co. Ltd.: Telephone mouth-pieces.

British Thomson-Houston Co. Ltd.: Relay contacts.

Ericsson Telephone Limited: Coils.

Tuck & Co. Ltd.: Asbestos packing.

Dick's Asbestos Co. Ltd.: Pressure jointing.

Joseph Steel & Sons Ltd.: Locomotive spares.

Silvertown Lubricants Limited: Oil.

Samuel Osborn & Co. Ltd.: Tools for wheel lathes.

Steel, Peech & Tozer Branch of the United Steel Cos. Ltd.: Tyres.

Sterns Limited: Oil.

Vacuum Oil Co. Ltd.: Sight-feed glasses, oil.

B. J. Hall & Co. Ltd.: Gears, shades.

B. & S. Massey Limited: Steel pinions.

Metropolitan-Vickers Electrical Export Co. Ltd.: Copper joint-rings.

R. A. Lister & Co. Ltd.: Gaskets.

E. Baylis & Co. Ltd.: Iron chains.

H. J. Skelton & Co. Ltd.: Mild-steel plates.

Ferodo Limited: Asbestos packing.

International General Electric Co. of New York Ltd.: Gauges, segments, springs.

Midland Electric Manufacturing Co. Ltd.: Switches.

Kendall & Gent (1920) Limited: Chasers.

Alfred Herbert Limited: Dieheads.

A. Reyrolle & Co. Ltd.: Weatherproof outlet sockets.

Railway Stock Market

In the absence of improvement in demand, an easier tendency developed in most sections of the Stock Exchange, although confidence in the future was again indicated by the very small amount of selling in evidence. South American railway stocks continued to provide one of the few active features of markets, but in some cases, due to the firmness with which they are held, prices responded strongly to only moderate improvement in demand. The rise in Argentine railway stocks was followed by a fair amount of profit-taking, particularly in the ordinary and preference stocks; subsequently, the lower levels attracted renewed buying, and in most instances, declines on balance were moderate. The market remains hopeful that before long the British-owned Argentine railways will receive fairer treatment from the authorities in that country. It is realised that the forthcoming financial results will illustrate the difficulties under which the railways are working, but that the improvement in stock prices arises from hopeful views as to the outlook. Moreover, it is recognised that although in any case the dividend stage as regards the ordinary stocks must be a long way ahead, the invariable tendency is for Stock Exchange values to attempt to discount the future. Taking the long view, Argentine railway securities may show substantial improvement, although there

may be sharp fluctuations from time to time, in accordance with developments affecting the position and outlook of the railways. Meanwhile, debenture stocks of the leading companies offer attractive yields and combine investment merits with the speculative possibility of appreciation in price.

Main activity in foreign railway securities was for a time transferred to Brazilian railway stocks, after the news that the Leopoldina company had received permission to make a 25 per cent. increase in charges. It is doubtful, however, if this increase will more than offset the further rise in the cost of materials, etc. Leopoldina ordinary rose strongly to 7, and although best prices were not held, the preference stock also recorded a good rise on balance, and the debentures were 59, compared with 54½ a week ago. San Paulo ordinary participated in the upward movement with a rise from 59 to 63½.

Among Argentine stocks, B.A. Gt. Southern was 16, compared with 16½ a week ago, the 5 per cent. preference 30½, compared with 31, and the 4 per cent. debentures 66½, compared with 69. B.A. Western ordinary and 4½ per cent. preference at 14½ and 31 respectively, also lost a small part of the gains recorded a week ago; as have the 4 per cent. debentures at 61½, compared with 64. Central Argentine ordinary was fractionally lower

at 9½, but the 6 per cent. preference moved slightly better to 33½; the 4 per cent. debentures at 55½ were a point down on balance. Elsewhere, United of Havana debentures were 36, against 36½ a week ago. Antofagasta preference gained a point at 49. Canadian Pacifics were maintained at 16½.

Home railway stocks reflected the surrounding inactivity of most sections of the Stock Exchange. There were, however, gains of half-a-point in Great Western debentures, guaranteed and preference stocks; prior charges tended to remain under the influence of the recent improvement in gilt-edged. Great Western ordinary was maintained at 59, at which the yield is 7½ per cent. L.M.S.R. ordinary was little changed at 31½. The yield of nearly 8 per cent. on the latter failed to attract demand. Sooner or later it would seem, however, that yield considerations will result in buying of home railway junior stocks. L.M.S.R. 1923 preference improved on balance from 59½ to 60½, and the senior preference was maintained at 74. L.N.E.R. second preference rallied to 32½, but later eased to 32, which, however, compared with 31½ a week ago. The first preference was slightly better at 59½. Southern deferred at 24 was unchanged on balance, as was the preferred at 75½. London Transport "C" eased from 70 to 69½.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ending	Traffic for week			No. of Weeks	Aggregate traffics to date			Shares or stock	Prices					
			Total this year	Inc. or dec. compared with 1941/2	1942/3		Totals		Increase or decrease		Highest 1942	Lowest 1942	Oct. 8 1943	Yield % (See Note)		
							1941/2	1942/3								
Antofagasta (Chili) & Bolivia	834	3.10.43	£33,350	+	£7,760	40	£1,122,200	£844,190	+	£278,010	Ord. Stk.	14	7½	15½ Nil		
Argentine North Eastern	753	2.10.43	16,494	+	1,722	14	190,40	188,478	+	1,392	6 p.c. Deb.	16½	3	Nil		
Bolivar	174	Sep., 1943	5,756	+	238	40	47,669	40,709	+	6,960	Bonds	20½	9	22½ Nil		
Brazil	...	...	—	—	—	—	—	—	—	22,320	Ord. Stk.	7½	4	7½ Nil
Buenos Ayres & Pacific	2,807	2.10.43	103,200	+	10,620	14	1,156,620	1,178,940	—	—	Ord. Stk.	12½	7½	16 Nil		
Buenos Ayres Great Southern	5,080	2.10.43	166,500	+	22,860	14	1,939,080	1,764,600	+	174,430	Ord. Stk.	12½	6	14½ Nil		
Buenos Ayres Western	1,930	2.10.43	55,683	+	4,980	14	660,360	674,640	—	14,280	—	12½	6	14½ Nil		
Central Argentine	3,700	2.10.43	147,705	+	21,297	14	1,761,468	1,692,081	+	69,397	—	9½	4½	9½ Nil		
Do.	...	...	—	—	—	—	—	—	—	—	Did.	34	2½	4 Nil
Cent. Uruguay of. M. Video	972	2.10.43	35,142	+	11,555	14	40,783	285,343	+	121,443	Ord. Stk.	8	4	7½ Nil		
Costa Rica	262	Aug., 1943	25,656	+	11,729	8	48,947	26,688	—	22,219	Sck.	16½	11	15 Nil		
Dorada	70	July, 1943	26,425	+	9,165	28	146,917	98,475	+	46,442	1 Mt. Db.	90	89	95½ 6½		
Entre Rios	808	2.10.43	21,924	+	276	14	269,994	250,122	+	19,872	Ord. Stk.	33	4½	7 Nil		
Great Western of Brazil	1,030	2.10.43	18,403	+	4,430	43	613,500	403,200	+	210,300	Ord. Stk.	9½	9½	33/9 Nil		
International of Cl. Amer.	794	Aug., 1943	\$540,396	+	\$242,201	32	\$5,025,556	\$4,308,750	+	\$716,806	—	—	—	—		
Intercoceanic of Mexico	...	...	—	—	—	—	—	—	—	—	1st Pref.	1½	5/3	2 Nil
La Guaira & Caracas	223	Sep., 1943	8,035	—	555	39	76,460	63,355	—	13,105	5 p.c. Deb.	11½	5	86½ Nil		
Leopoldina	1,918	2.10.43	39,134	+	4,542	40	1,347,779	1,196,280	—	151,499	Ord. Stk.	6½	3½	6½ Nil		
Mexican	483	30.9.43	ps. 581,700	+	ps. 226,700	12	ps. 5,325,000	ps. 3,767,100	—	ps. 1,557,900	Ord. Stk.	1	½	1½ Nil		
Midland Uruguay	319	July, 1943	15,294	+	2,680	36	15,294	12,614	—	2,680	—	—	—	—		
Nitrate	382	30.9.43	6,125	—	1,774	39	11,950	14,095	—	25,145	Ord. Sh.	77/	3½	78/9 Nil		
Paraguay Central	274	1.10.43	\$5,213,000	+	\$1,572,000	14	\$73,303,000	\$50,816,000	—	\$22,487,000	Pr. Lt. Stk.	53	40	73 8½ Nil		
Peruvian Corporation	1,059	Sep., 1943	107,261	+	21,631	13	314,208	251,242	—	62,364	Pr. Lt. Stk.	19½	5½	15½ Nil		
Salvador	100	Aug., 1943	c 91,000	+	c 42,000	9	c 199,000	c 128,000	—	c 71,000	Pr. Lt. Stk.	59	41	62 3½ Nil		
San Paulo	153½	26.9.43	49,540	+	13,658	39	1,658,516	1,422,357	—	236,159	Ord. Stk.	41	22/	28/9 Nil		
Talca	160	Aug., 1943	6,215	—	980	12	9,730	11,725	—	1,995	Ord. Stk.	41/	23/	28/9 Nil		
United of Havana	1,301	2.10.43	45,117	+	504	14	666,467	540,553	—	125,914	Ord. Stk.	8½	2½	5½ Nil		
Uruguay Northern	73	July, 1943	1,372	+	230	4	1,372	1,142	+	230	—	—	—	—		
Canadian Pacific	17,034	30.9.43	1,700,200	+	292,400	39	43,204,200	37,425,400	+	5,778,800	Ord. Stk.	164	9½	16 Nil		
India	Baroda Light	202	Aug., 1943	15,285	+	2,003	22	107,055	76,587	+	30,468	—	—	—		
Bengal-Nagpur	3,267	July, 1943	955,725	+	17,325	17	4,184,625	3,553,425	—	631,200	Ord. Stk.	102½	88	102½ 3½		
Madras & Southern Mahratta	2,939	31.7.43	273,075	—	81,874	18	3,324,300	2,778,222	—	546,078	—	105½	87	107½ 6½		
South Indian	2,349	20.7.43	199,562	+	16,961	15	2,219,544	2,054,903	—	164,641	—	103½	88½	103½ 4½		
Various	Egyptian Delta	—	31.8.43	18,712	+	5,930	22	215,523	163,779	+	52,147	Prf. Sh.	5½	1½	2½ Nil	
Manila	—	—	—	—	—	—	—	—	—	—	B. Deb.	44	35	40 8½ 6		
Midland of W. Australia	277	Aug., 1943	36,199	+	7,460	9	70,424	56,608	+	13,816	Inc. Deb.	95	90	100		
Nigerian	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
South Africa	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Victoria	—	—	—	—	—	—	—	—	—	—	—	—	—	—		

Note. Yields are based on the approximate current prices and are within a fraction of ½.

↑ Receipts are calculated at 1s 6d. to the rupee

Argentine traffics are given in sterling calculated at 16½ pesos to the £

§ ex dividend